U.S. Department of the Interior
Bureau of Land Management

BLM Colorado Special Status Plant Species Guide

Revised March 2025

Monitoring *Sclerocactus dawsoniae* near De Beque, Colorado.

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BLM Colorado Special Status Plant Species Guide

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Revised March 2025

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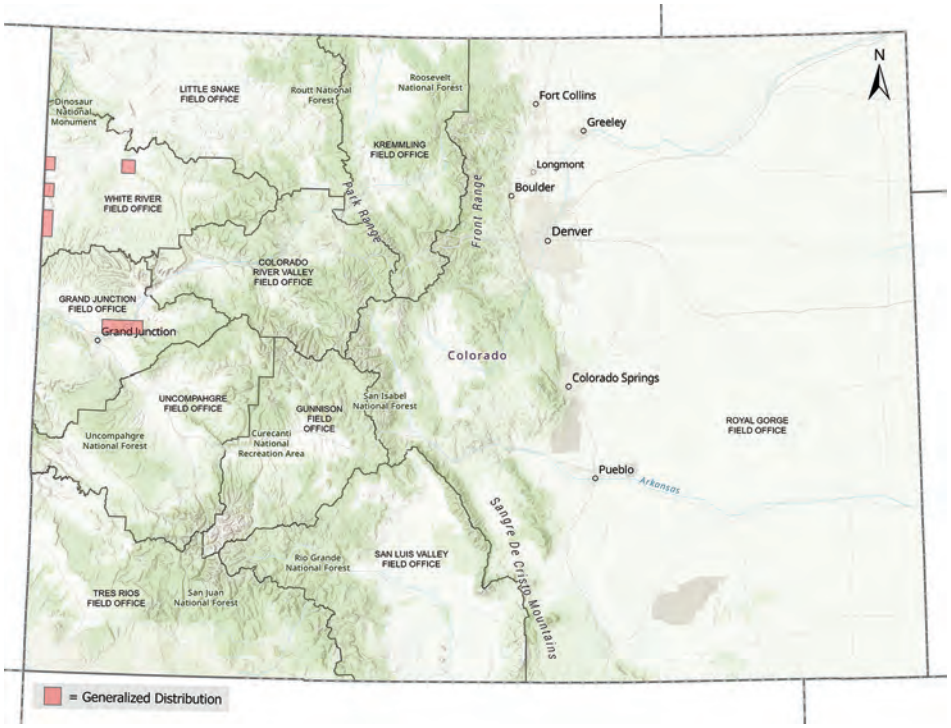
Introduction

This fully revised guide of the Bureau of Land Management (BLM) special status species plant list for Colorado is intended to assist agency biologists, consultants, and members of the public in the identification of special status plants in Colorado. This revision includes 74 plant species that are either listed as threatened or endangered under the Endangered Species Act (ESA), are proposed or candidates for listing under the ESA, have been delisted from the ESA within a 5-year period, or are designated as sensitive by the BLM. Many of these species occur primarily on the 8.3 million acres of land managed by the BLM in Colorado, positioning the agency with an important responsibility to influence their long-term conservation. It is the policy of the BLM to manage for proactive, landscape- and ecosystem-level, and scientifically informed conservation and recovery of special status species and their habitats (BLM 2024).

The information compiled herein draws on a variety of source material, including the "Colorado Rare Plant Field Guide" (Spackman et al. 1997). Species names and descriptions, including original species descriptions, come from a variety of sources but lean heavily on the "Flora of Colorado," second edition (Ackerfield 2022). Many of the images contained in this guide were crowdsourced by the public through various online platforms. This guide would not have been possible to produce in such breadth without their contributions. This highlights the important role the public can play in understanding patterns of species occurrence on public landscapes. Even so, certain species remain deficient in terms of the number of observations and representative photos of their characteristics and habitat. Placeholders have been retained in print as outstanding photo needs with the hope that we are able to fill in some of these knowledge gaps.

Aliciella stenothyrsa
Uinta Basin gilia

Phil Krening



Aliciella stenothyrsa (A. Gray) J.M. Porter
Polemoniaceae (phlox family)
Conservation ranks: NatureServe G3/S2, BLM Sensitive
Occurrence by field office: Grand Junction and White River

Taxonomy
Synonym = *Gilia stenothyrsa* A. Gray

Description
Plants: unbranched biennials with glandular stems, mostly 1.5–6 dm tall; **leaves**: basal leaves deeply pinnatifid, cauline leaves alternate, reduced upward; **flowers**: a 5-lobed, tubular corolla, white to pale cream or pale purple, stamens exserted at full anthesis, anthers rapidly dehiscing (Spackman et al. 1997; Ackerfield 2022).

Similar Species
Uinta Basin gilia is the only biennial member of its genus with cream-colored flowers that occurs in Colorado.

Habitat
Light-colored silty to gravelly soils derived from the Green River or Uinta Formations. In grassland, sagebrush, mountain mahogany, or pinyon-juniper communities (Spackman et al. 1997). Occasionally found among a suite of specialized oil shale endemic plants including *Penstemon albifluvis*, *Cryptantha rollinsii*, and *Eriogonum ephedroides*. Occupied sites are generally sparsely vegetated and can be somewhat disturbed. Elevation 4,800–6,000 ft.

Phenology
Plants flower from late May into June. Fruits form late June to early July.

Distribution
Regional endemic. *Aliciella stenothyrsa* is found throughout the Uinta Basin and Colorado River drainage in western Colorado and central Utah. Known from Rio Blanco and Mesa counties in Colorado.

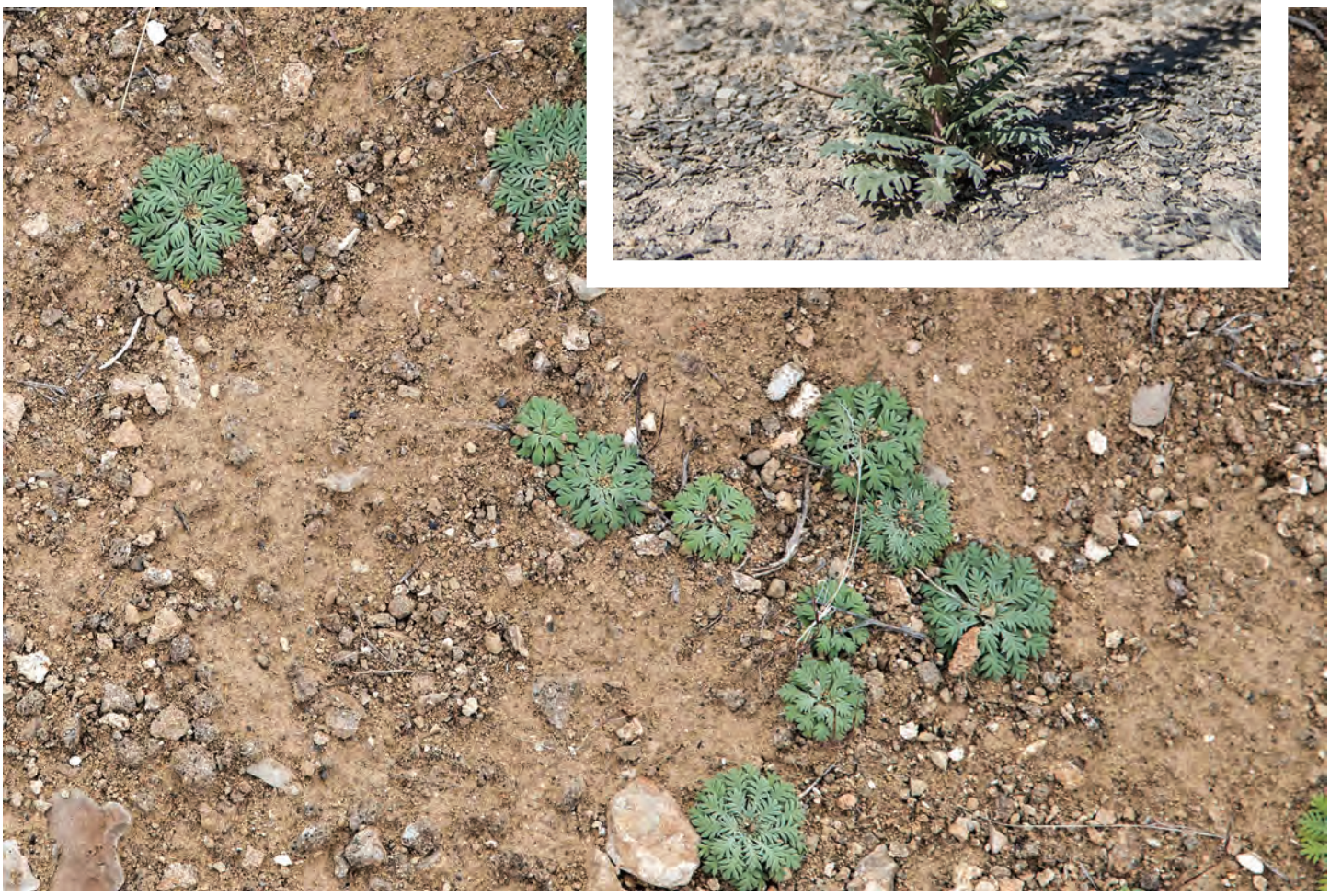
Phil Krening

As a biennial, *A. stenothyrsa* persists for a year as a rosette before flowering. Phil Krening

Phil Krening

Phil Krening

outstanding photo need



Phil Krening

Amsonia jonesii
Jones' bluestar

Shalana Gray

Amsonia jonesii Woodson
Apocynaceae (dogbane family)
Conservation ranks: NatureServe G4/S2, BLM Sensitive
Occurrence by field office: Grand Junction and Tres Rios

Description

Plants: perennials, stems 1.5–5 dm tall, usually much branched from the base, plants with milky latex, tap rooted; **leaves**: alternate, ovate to broadly ovate 3–6.5 cm long, glabrous and leathery; **flowers**: tubular, powder-blue, with 5 lobes united at the base; **fruit**: a pair of follicles (Ackerfield 2022).

Similar species

Jones' bluestar is the only member of its genus known to occur naturally in Colorado and is not likely to be confused with other species in appropriate habitat.

Habitat

Semi-desert scrub, in open areas consisting of pinyon-juniper woodland and sagebrush communities with clay, sandy, or gravelly soils. Frequently in rocky gorges and canyons. Elevation 4,900–6,000 ft.

Phenology

Plants flower in late April and May.

Distribution

Regional endemic of the Colorado Plateau. In Colorado, *Amsonia jonesii* is only known from far-western Mesa and Montezuma counties.

Mollie Freilicher

Joey Santore

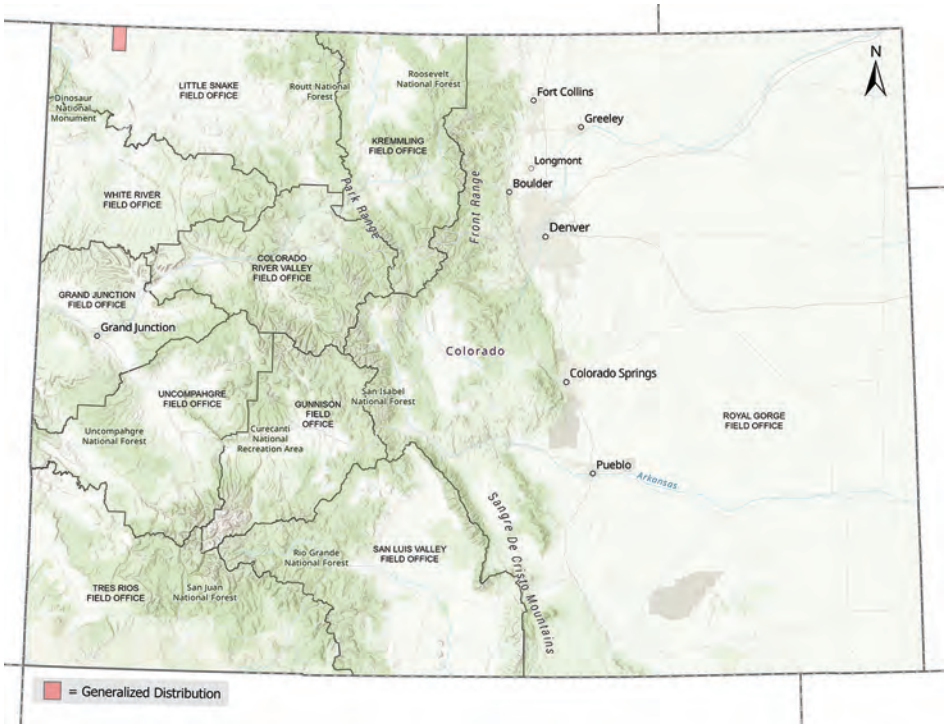
Amsonia jonesii follicle fruit. Joey Santore

Mollie Freilicher

Matt Langemeier

Artemisia capitata
Rock tansy

Savanna Smith



Artemisia capitata (Nutt.) Sòn. Garcia, Garnatje, McArthur, Pellicer, S.C. Sand
Asteraceae (sunflower family)
Conservation ranks: NatureServe G4/S1, BLM Sensitive
Occurrence by field office: Little Snake

Taxonomy
Synonym = *Sphaeromeria capitata*

Description
Plants: densely caespitose perennial herbs up to 12 cm tall; **leaves**: tomentose, mainly basal, lobed with narrow linear segments, 4–10 mm long; **flowers**: yellow, arranged in solitary, dense globose capitate clusters; **fruit**: a cypsela, 3–5 mm long, glabrous or sparsely gland-dotted (Ackerfield 2022; Spackman et al. 1997).

Similar species
Artemisia nuttallii occurs in similar habitat and geography but has flower heads that are subcapitate and basal leaves that have wider, cuneate lobes.

Habitat
Dry, rocky hills and desert flats in shallow, fine-textured soils that overlie rocky outcrops. Elevation 7,500–8,000 ft.

Phenology
Plants flower from June through July.

Distribution
Regional endemic with a distribution centered in the Wyoming Basin but occurs sporadically throughout the mountain west in Montana and Utah as well. In Colorado, *Artemisia capitata* is only known to occur in northern Moffat County.

Matt Berger

Cecelia Alexander

Matt Berger

Cecelia Alexander

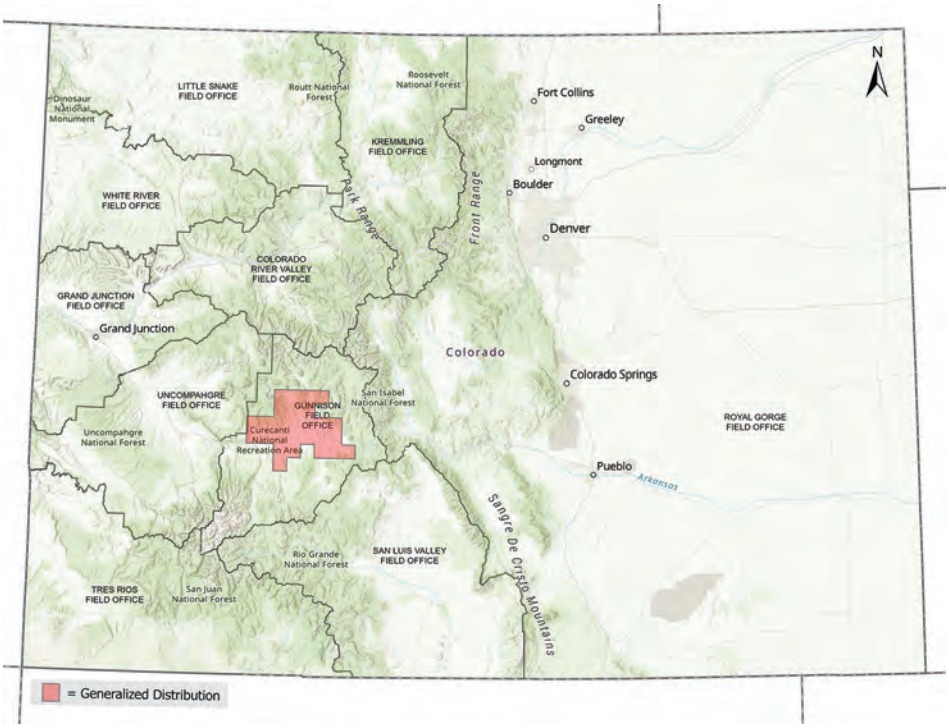
Joey Santore

Cecelia Alexander

outstanding photo need

Astragalus anisus
Gunnison milkvetch

Lindsey Conrad



Astragalus anisus M.E. Jones
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G3/S3, BLM Sensitive
Occurrence by field office: Gunnison

Description

Plants: short, tufted perennials appearing silvery-gray and cinereous with dolabriform hairs; **leaves**: pinnately compound with 11 to 15 obovate leaflets, each 4–10 mm long; **flowers**: typically pink-purple, borne on short racemes; **fruit**: short, fleshy legumes (1.3 to 1.8 cm in length) becoming spongy with maturity, obovoid to almost globose, bilocular, strigose, not mottled (Decker and Anderson 2004; Ackerfield 2022).

Similar species

Astragalus missouriensis has obscurely purple-mottled legumes and occurs primarily on Colorado's eastern slope.

Habitat

Found in sagebrush steppe and slopes. Usually on sandy clay to gravelly soils overlying granitic bedrock; parent materials include rhyolite, tuff, gneiss, and schist (Decker and Anderson 2004). Elevation 7,400–9,500 ft.

Phenology

Plants flower May through June.

Distribution

Endemic to Colorado. *Astragalus anisus* is known only from Colorado's Gunnison Basin in Gunnison and Saguache counties.

Ernie Marx

Ernie Marx

Sequoia Janirella Wrens

Jared Shorma

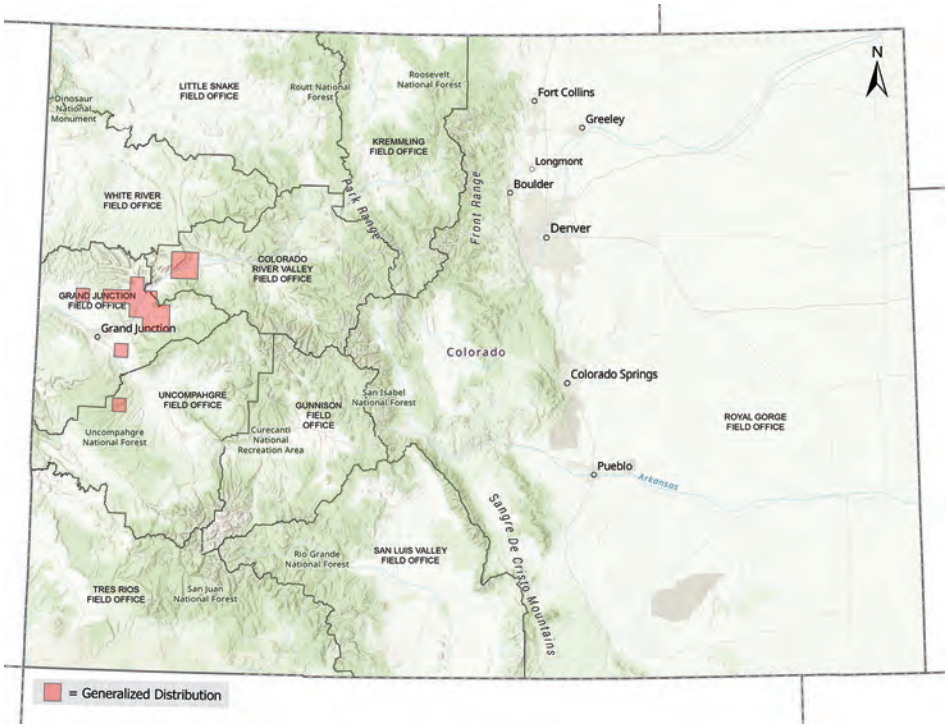
Lindsey Conrad

Thomas Bergman

Thomas Bergman

Astragalus debequaeus
Debeque milkvetch

Phil Krening



Astragalus debequaeus S.L. Welsh
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G2/S2, BLM Sensitive
Occurrence by field office: Colorado River Valley, Grand Junction, and Uncompahgre

Description

Plants: perennials, forming multibranched clumps up to roughly 2 dm in height, stems glabrous; **leaves**: pinnately compound with 13–21 elliptic to oblanceolate leaflets, glabrous; **flowers**: white or yellowish-white, occasionally with a purple-tinged keel, the calyx tube is sparsely black strigose, 5–6 mm long; **fruit**: an inflated legume, scabrid-pubescent to glabrous (Spackman et al. 1997; Ackerfield 2022).

Similar species

Astragalus eastwoodiae has pink-purple flowers and calyx tubes that are mostly 8–9 mm long (Ackerfield 2022). *A. flavus* frequently can be found occupying the same sites as Debeque milkvetch but differs in that it has yellow flowers and leaflets that are narrowly elliptic to linear oblong.

Habitat

Primarily variegated sedimentary exposures of the Atwell Gulch Member of the Wasatch Formation, in areas surrounded by pinyon-juniper woodlands and desert shrub. Plants are frequently clustered on toe slopes, along drainages, and on steep erosive slopes. Soils contain high bentonite clay content and are frequently littered with sandstone fragments (Welsh 1985; O'Kane 1986; Spackman et al. 1997; Colorado Natural Heritage Program 2023). Elevation 5,100–6,400 ft.

Phenology

Plants flower April through May and produce fruit May through July.

Distribution

Endemic to Colorado. All but one occurrence of *Astragalus debequaeus* are known from the Colorado River Valley in Garfield and Mesa counties. A single occurrence has been reported in Escalante Canyon in Delta County.

James Bailey

Phil Krening

Phil Krening

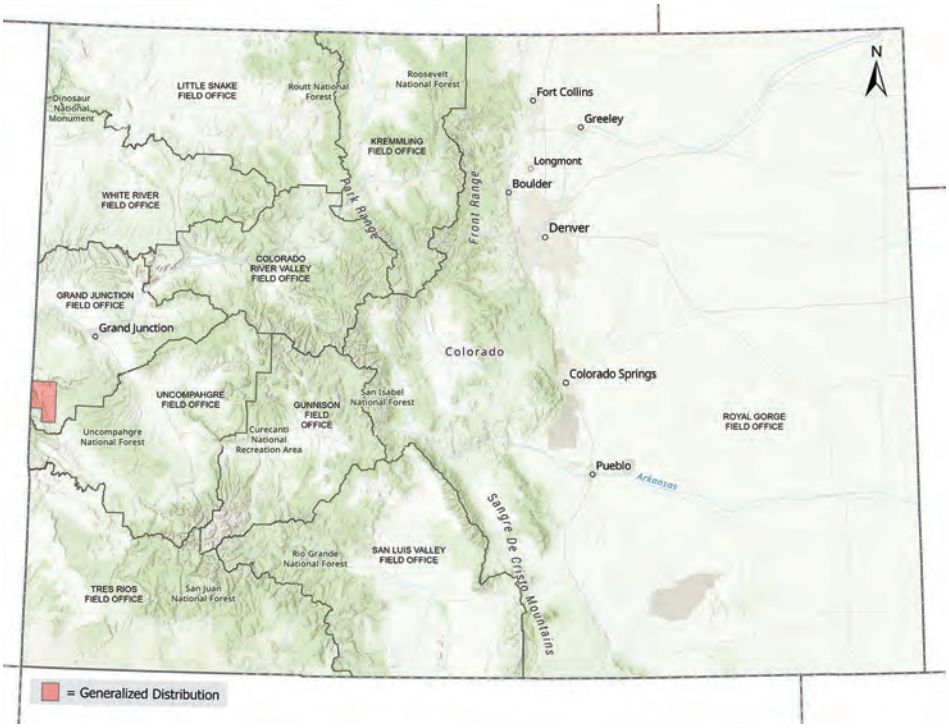
Phil Krening

Phil Krening

Phil Krening

Astragalus desperatus var. *neeseae*
Rimrock milkvetch

Tony Frates



Astragalus desperatus var. *neeseae* Barneby
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G5T2?/S2, BLM Sensitive
Occurrence by field office: Grand Junction

Taxonomy
Synonyms = *Astragalus equisolensis* Neese & S.L. Welsh and *Astragalus desperatus* M.E. Jones

Description
Plants: subcaulescent or shortly caulescent perennials, 5–15 cm tall, with leafless flowering stems, pubescent; **leaves**: pinnately compound with 7–13 (15) leaflets; **flowers**: usually bicolored with purple wings and keel, the banner is usually purple with white stripes, corolla 13–16 mm long, in 4–13 flowered racemes; **fruit**: a distinct, mottled, loosely villous, and lunately incurved legume (Ackerfield 2022; Welsh et al. 2015).

Similar species
Not likely to be confused with other members of the genus so long as flowers or fruit are present. *Astragalus desperatus* has flowers that are 7–10 mm long.

Habitat
Red, river terrace sands and gravel in mixed desert and salt-desert shrub vegetation communities that are generally dominated by sagebrush, shadscale, and horsebrush. The populations in Mesa County are in an open juniper-blackbrush community on rocky convex slopes. Often found growing under blackbrush shrubs. Elevation 4,500–7,000 ft.

Phenology
Plants flower in late April and May and fruit by the end of May through mid-summer.

Distribution
Considered disjunct in Colorado. The majority of *Astragalus desperatus* var. *neeseae's* distribution occurs in Utah's Uinta Basin. In Colorado, known from the canyons of the Dolores River near Gateway in Mesa County.

Savanna Smith

Jessica Smith

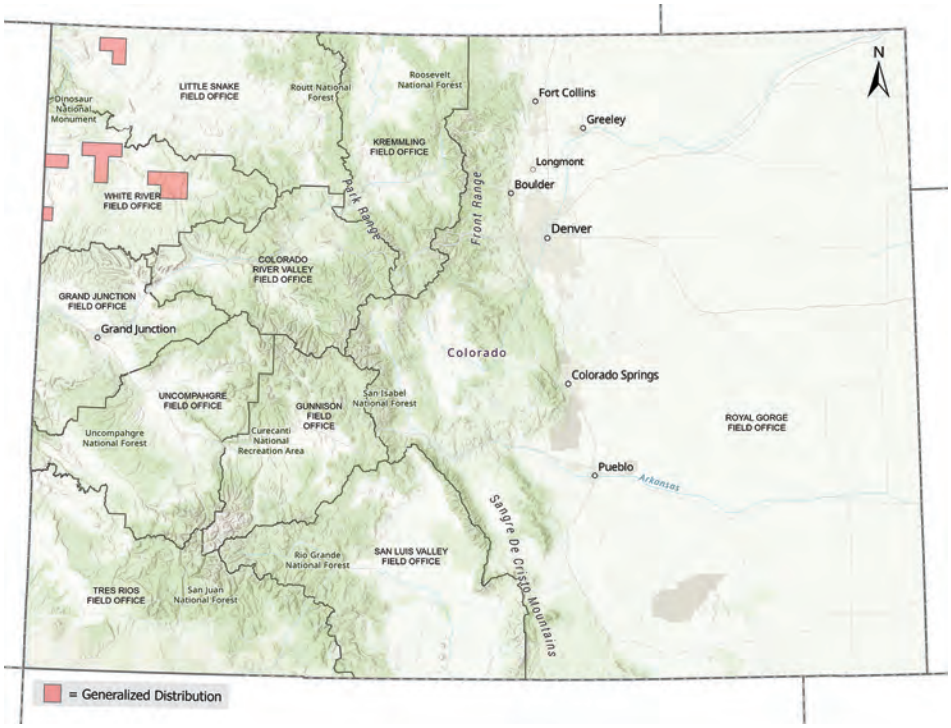
Jessica Smith

Jared Higgs

Savanna Smith

Astragalus detritalis
Debris milkvetch

Ernie Marx



Astragalus detritalis M.E. Jones
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G3/S2S3, BLM Sensitive
Occurrence by field office: Little Snake and White River

Description

Plants: stemless, caespitose-matted perennials from 2 to 6 cm in height; **leaves**: pinnately compound with 3 to 5 narrowly oblanceolate to linear, spinulose-tipped leaflets (3–30 mm in length), with dolabriform hairs; **flowers**: in 3–8 bright pink-purple flowered racemes; **fruit**: oblong to linear, green or purple-mottled legumes, erect, sessile in a close terminal cluster, strigose, not inflated, more than twice as long as wide (Spackman et al. 1997; Ackerfield 2022).

Similar species

Astragalus calycosus var. *scaposus* has oval leaflets and smaller, densely strigose pods. *A. spatulatus* is mat-forming and has smaller flowers and much shorter pods (Spackman et al. 1997).

Habitat

Found in barren habitats in pinyon-juniper and mixed desert shrub communities, often in rocky soils ranging from sandy clays to sandy loams, and on alluvial terraces with cobbles (Spackman et al. 1997). Elevation 5,400–8,700 ft.

Phenology

Plants flower late April to early June with a peak in mid-May, and fruiting occurs from late May to late June.

Distribution

Regional endemic. *Astragalus detritalis* is known from Rio Blanco and Moffat counties in Colorado. It also occurs throughout the Uinta Basin in Utah (Welsh et al. 1993).

Ernie Marx

Scott F. Smith

Leo Hardin

Leo Hardin

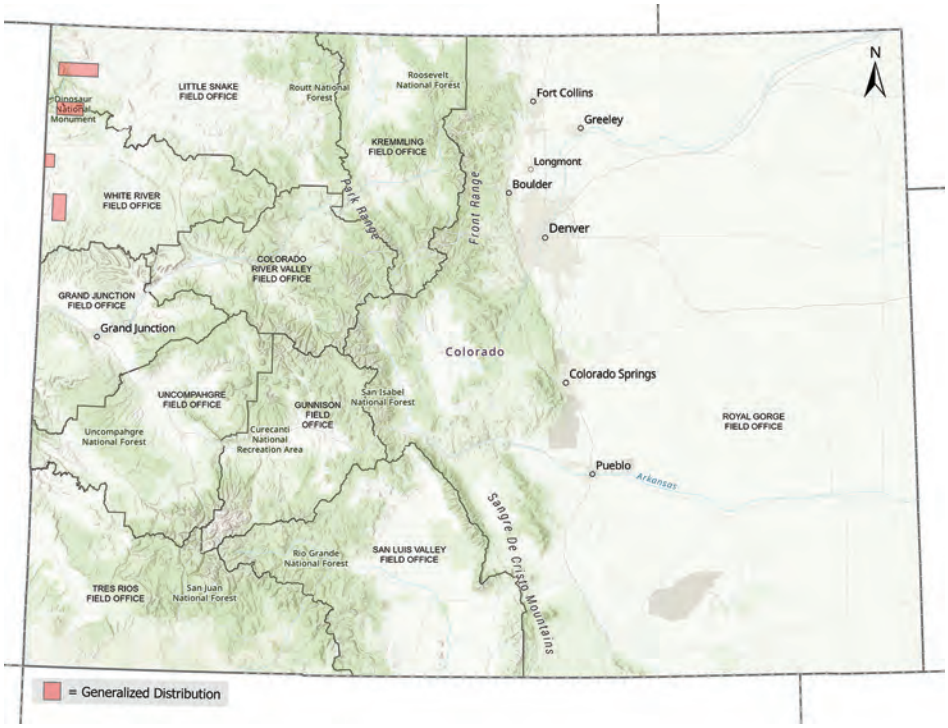
Scott F. Smith

Jared Higgs

Savanna Smith

Astragalus duchesnensis
Duchesne milkvetch

Tony Frates



Astragalus duchesnensis M.E. Jones
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G3/S2, BLM Sensitive
Occurrence by field office: Little Snake and White River

Description

Plants: shortly rhizomatous perennials, ascending to 3 dm, cinereous; **leaves**: pinnately compound with approximately 7–11 oblong-lanceolate or linear leaflets, 5–25 mm long; **flowers**: borne on loosely 6–20 flowered racemes, reddish-purple with white wings, the banner 10–12 mm long; **fruit**: oblong or oblong-oblanceolate legumes, obcompressed, or 3-angled at base and laterally compressed apically, strigulose (Ackerfield 2022).

Similar species

Astragalus convallarius has shorter pods (10–12 mm in length), is wiry in appearance, and has flowers that are greenish-white and tinged with purple.

Habitat

Found on sandy and gravelly pediments including sandy mesas and around sandstone or shale outcrops. Often with salt desert scrub and pinyon-juniper communities. Elevation 4,600–6,400 ft.

Phenology

Plants flower April through June.

Distribution

Regional endemic primarily occurring in the Uinta Basin and Browns Park. In Colorado, *Astragalus duchesnensis* is known to occur in Rio Blanco and Moffat counties.

Tony Frates

Andrey Zharkikh

Andrey Zharkikh

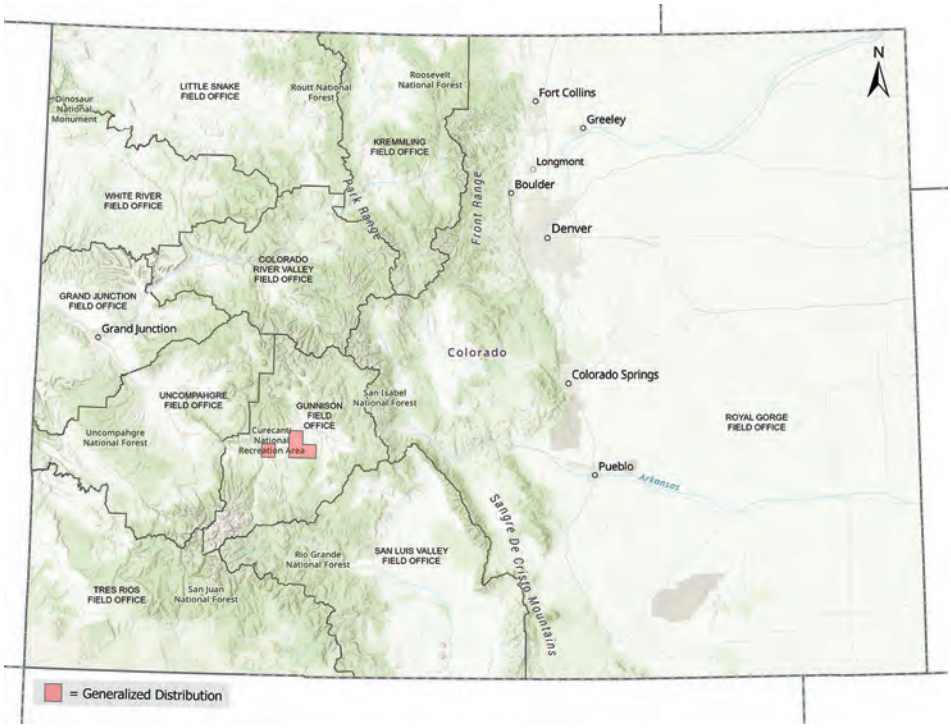
Robert Johnson

Andrey Zharkikh

Andrey Zharkikh

Astragalus microcymbus
Skiff milkvetch

Matt Langemeier



Astragalus microcymbus Barneby
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G1G2/S1S2, BLM Sensitive, SWAP Tier 1
Occurrence by field office: Gunnison

Description

Plants: caulescent perennials with purplish stems, 2.5–6 dm long; **leaves**: pinnately compound 2–4 cm long with 9–15 leaflets; **flowers**: white, lilac-tinged, in loosely (3) 7–14 flowered racemes; **fruit**: green and purple-speckled legumes, white-villous, 6–9 mm long (Ackerfield 2022; Spackman et al. 1997).

Similar species

Astraglaus flexuosus has legumes that are greater than 1 cm in length.

Habitat

Open sagebrush or juniper-sagebrush communities on moderately steep to steep slopes. Often found in rocky areas with a variety of soil conditions from clay to cobbles, gray to reddish in color (Spackman et al. 1997). Elevation 7,500–8,500 ft.

Phenology

Plants typically flower in mid to late May through June and occasionally into early July. Fruit may be observed as early as late May but is usually observable by mid-June. Peak fruiting period is mid-July. By late August, plants are dry and fruits have dehisced (Spackman et al. 1997; DePrenger-Levin et al. 2013). Individual plants may remain dormant throughout a growing season or longer in a state of vegetative dormancy when environmental conditions are unfavorable.

Distribution

Endemic to Colorado. *Astragalus microcymbus* is narrowly restricted to Colorado's Gunnison Basin in Gunnison and northwestern Saguache counties.

Ernie Marx

Ernie Marx

USFWS

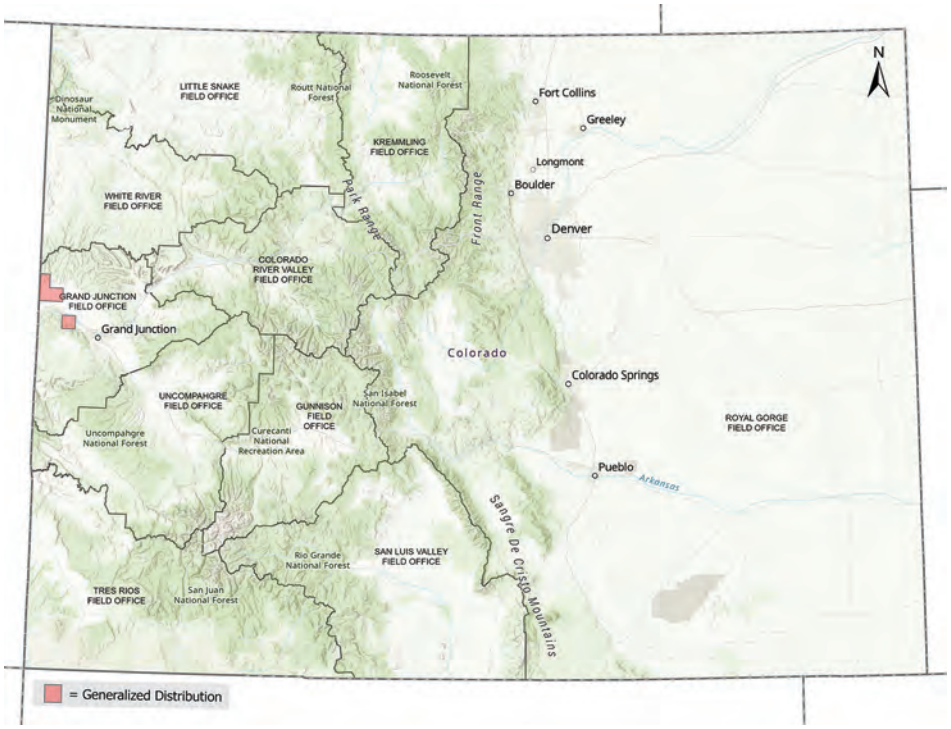
Ernie Marx

My-Lan Le

Matt Langemeier

Astragalus musiniensis
Ferron's milkvetch

Andrey Zharkikh



Astragalus musiniensis M.E. Jones
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G3/S1, BLM Sensitive
Occurrence by field office: Grand Junction

Description

Plants: low-growing, stemless perennials with caudices that often have the thatch remaining of the previous year's leaf rachises; **leaves**: ternately or pinnately compound, with (1) 3–5 leaflets; **flowers**: pink-purple or reddish-violet, the calyx tube dark hairy; **fruits**: ovoid-lanceolate or ellipsoid legumes that are thinly pilose with basifixed hairs, 15–36 mm x 10–17 mm, obcompressed, not mottled (Spackman et al. 1997; Weber and Wittmann 2012; Ackerfield 2022).

Similar species

Astragalus piscator has laterally compressed legumes. *A. chamaeleuce* has more numerous, smaller leaflets and a less prominently beaked and purple spotted or mottled legumes (Spackman et al. 1997).

Habitat

Gullied bluffs, knolls, benches, and open hillsides in pinyon-juniper woodlands or desert shrub communities. Mostly on shale, sandstone, or alluvium (Spackman et al. 1997). Elevation 4,600–7,000 ft.

Phenology

Plants flower late April through early June.

Distribution

Regional endemic with a distribution centered in central Utah. In Colorado, *Astragalus musiniensis* is known to occur in the Colorado River Valley in Mesa and Garfield counties.

Jackie Grant

Andrey Zharkikh

Andrey Zharkikh

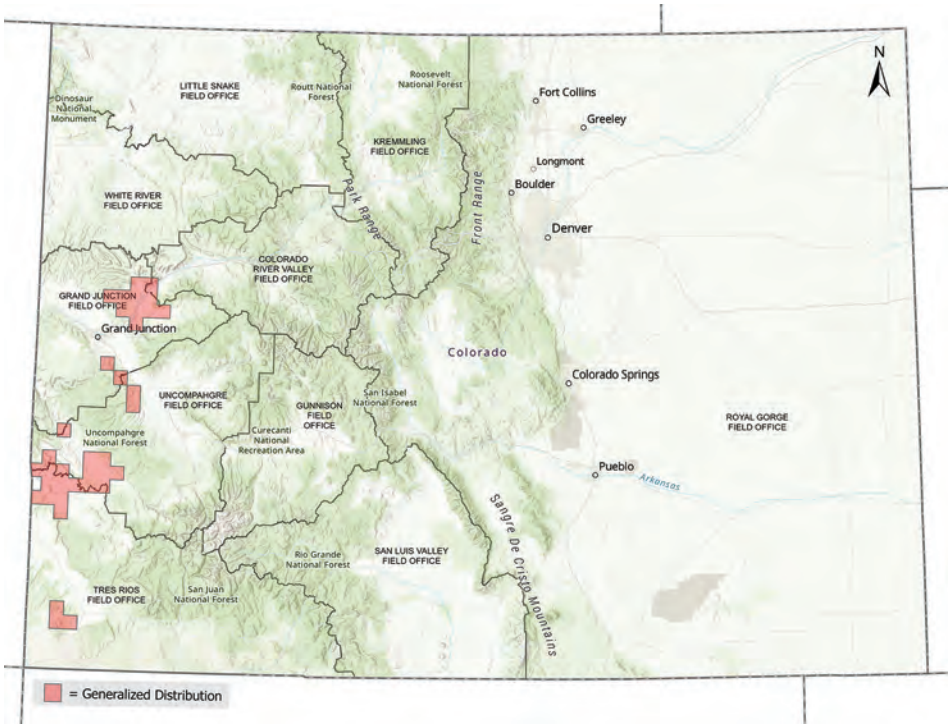
Leo Hardin

Leo Hardin

Matt Langemeier

Astragalus naturitensis
Naturita milkvetch

Phil Krening



Astragalus naturitensis Payson
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G3/S3, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Colorado River Valley, Grand Junction, Uncompahgre, and Tres Rios

Description

Plants: subacaulescent perennials, tufted; **leaves**: pinnately compound with 9–15 obovate to elliptic, mostly folded leaflets, 2–7 mm long; **flowers**: bicolored, with a whitish-striate banner and purple or purple-tipped keel and wings, borne on 4–9 flowered subcapitate racemes, the calyx tube with mixed white and black hairs; **fruit**: narrow ellipsoid to oblong-lanceolate legumes, obcompressed to obcompressed-3 angled, 1.2–2 cm x (3) 4–6 mm, mottled, strigulose (Ackerfield 2022).

Similar species

Astragalus deterior is distinguished by its yellowish-white flowers and maculate keel. *A. desperatus* has smaller flowers, a shallower calyx tube, and a mottled, wrinkled, loosely villous legume. *A. monumentalis* var. *cottamii* is similar but has three-angled legumes in cross section with the dorsal face narrowly but deeply sulcate and semi-bilocular (Ackerfield 2022; Barneby 1964; Cronquist et al. 1984). *A. chamaeleuce* is frequently found co-occurring in the same habitat.

Habitat

Sandstone ledges, crevices of sandstone bedrock, dry-rock mesas, ledges, and detrital slopes (Harrington 1954). This species is found in pinyon-juniper woodlands in areas with shallow soils over exposed bedrock (Peterson et al. 1981). Usually, it is in small soil pockets or rock crevices in sandstone pavement along canyon rims. Elevation 5,000–7,000 ft.

Phenology

Plants flower April through early June and fruit in late May through early June.

Distribution

Wide-ranging endemic. Occurrences of *Astraglaus naturitensis* can be found across Colorado's western slope in Delta, Dolores, Garfield, Mesa, Montezuma, Montrose, and San Miguel counties. Also known from New Mexico, Utah, and the Navajo Nation in northeastern Arizona.

Phil Krening

Andriano Tsinigine

Bob Lagier

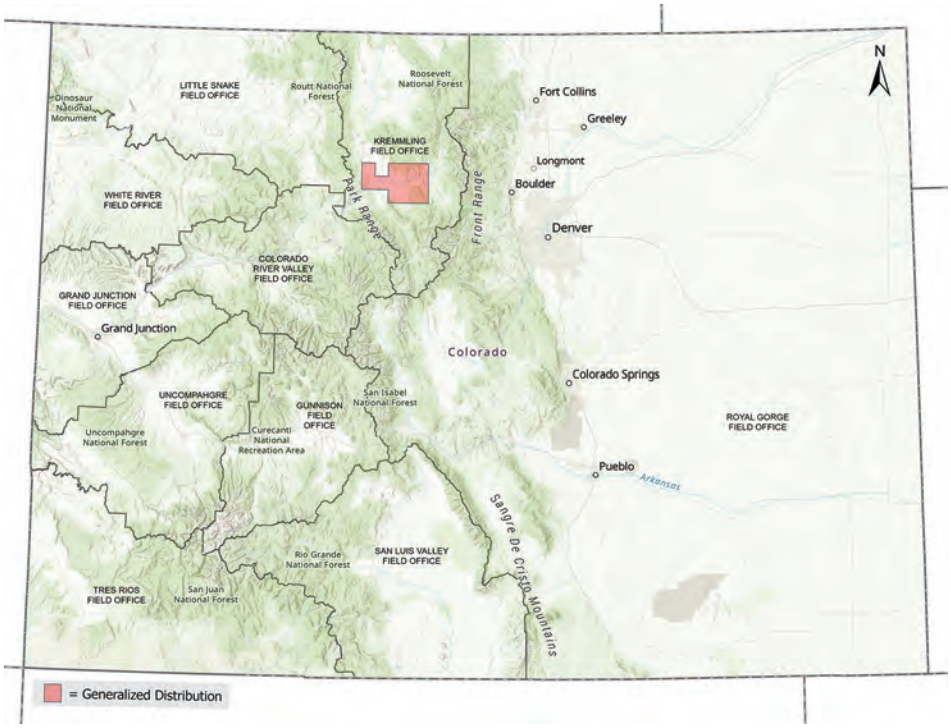
Bob Lagier

Phil Krening

Peter Gordon

Astragalus osterhoutii
Osterhout milkvetch

Phil Krening



Astragalus osterhoutii M.E. Jones
Fabaceae (pea or legume family)
Conservation ranks: ESA Endangered, NatureServe G2/S2, SWAP Tier 1
Occurrence by field office: Kremmling

Description

Plants: herbaceous perennials, typically composed of numerous bright-green erect or ascending stems up to 1 m in height; **leaves**: pinnately compound with narrow, linear leaflets approximately 3.8 cm long; **flowers**: white to cream-colored, about 2 cm long, racemes frequently exserted above the leaves, the calyx tube strigulose with black or mixed black and white hairs; **fruit**: long bright green, glabrous legumes that mature red, up to 45 mm in length, stipitate, and strongly laterally compressed (Ackerfield 2022).

Similar species

Osterhout milkvetch may be mistaken for the similar species *Astragalus pattersonii*, *A. convallarius*, and *A. bisulcatus*. The range of all of these species overlap in places with Osterhout milkvetch. All of these plants have a tall growth form. *A. pattersonii* has smaller, sessile subterete to obcompressed fruits. *A. bisulcatus* has strongly 2-grooved strigulose to glabrate legumes. *A. convallarius* has white, ochroleucus, purple-veined, or purple flowers and strigulose legumes. Osterhout milkvetch differs from all three of these species by its lime-green linear leaflets.

Habitat

Intermountain basin sagebrush communities and shale barrens in highly seleniferous, grayish-brown clay soils derived from the Niobrara, Pierre, and Troublesome formations. Elevation 7,400–7,900 ft.

Phenology

Plants typically flower from June to August. Individual plants may remain dormant throughout a growing season or longer in a state of vegetative dormancy when environmental conditions are unfavorable (Lesica and Steele 1994).

Distribution

Endemic to Colorado. *Astragalus osterhoutii* is narrowly restricted in Grand County, Colorado.

Phil Krening

Phil Krening

My-Lan Le

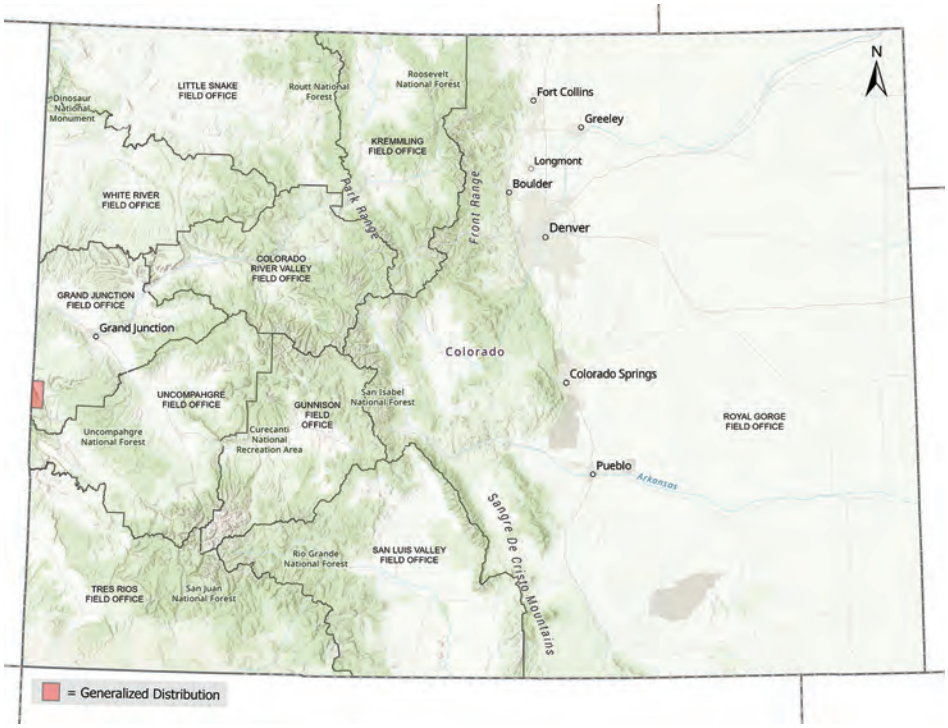
Phil Krening

My-Lan Le

Phil Krening

Astragalus piscator
Fisher milkvetch

Robb Hannawacker



Astragalus piscator Barneby & S.L. Welsh
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G3/S1, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Grand Junction

Description

Plants: acaulescent or subacaulescent, short-lived perennials, stems are mostly leafless, erect when in flower, and often spread out at the base of the leaves when in fruit; **leaves**: pinnately compound with 5–11 leaflets, yellowish-green on top and gray-green below covered in appressed, dolabriform hairs; **flowers**: lavender or pale-lilac, in 4–10 flowered racemes; **fruit**: densely strigose legumes, lanceolate, somewhat laterally compressed, purple-mottled at maturity (Spackman et al. 1997; Ackerfield 2022).

Similar species

Astragalus musiniensis has dorsiventrally compressed legumes that are thinly hirsute or villous. *A. chamaeleuce* differs in that the fruits are thickly succulent and fleshy when young and become spongy and pithy with age. The fruits of Fisher milkvetch are not spongy or pithy at maturity. *A. amphioxys* var. *vespertinus* has deciduous legumes that detach from the receptacle and dehisce on the ground (Ackerfield 2022).

Habitat

In Colorado, plants are typically associated with the red sandstone of the Cutler Formation, in sandy, sometimes gypsiferous soils of valley benches and gullied foothills (Spackman et al. 1997). Associated plant community consists of juniper-dominant desert scrub. Elevation 4,400–5,500 ft.

Phenology

Plants flower late April to early June.

Distribution

Regional endemic with a center of distribution in the vicinity of Moab, Utah. In Colorado, *Astragalus piscator* is known from the canyons of the Dolores River in far-western Mesa County. Also reported to occur on the Navajo Nation in northeastern Arizona.

Zach Coury

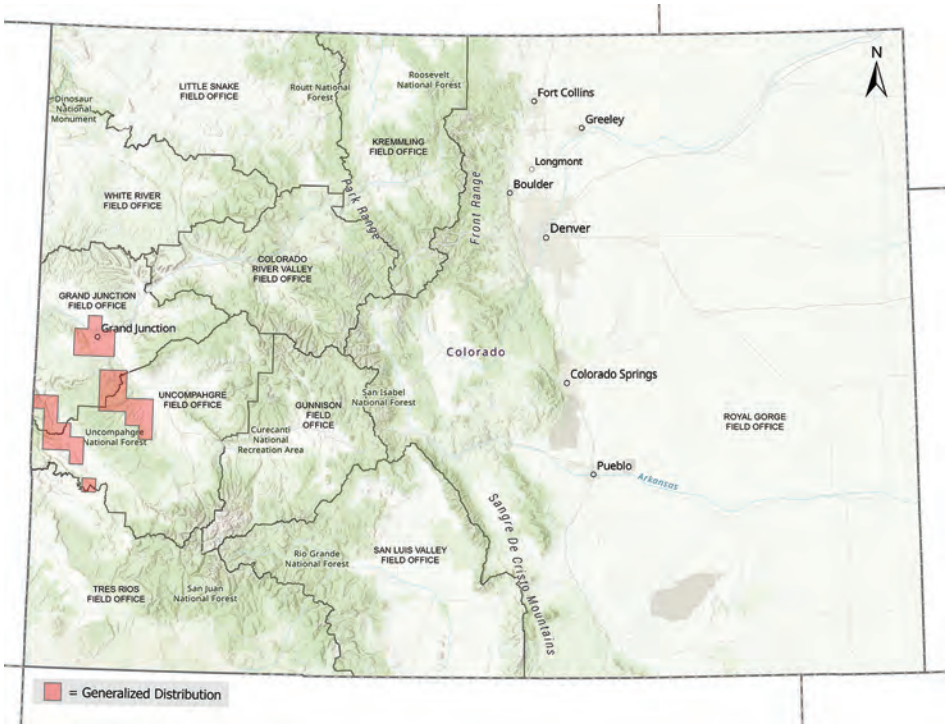
Zach Coury

Matt Langemeier

Savanna Smith

Astragalus rafaelensis
San Rafael milkvetch

Scott F. Smith



Astragalus rafaelensis M.E. Jones
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G3/S3, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Grand Junction and Uncompahgre

Taxonomy

Synonym = *Astragalus linifolius*. Statwick (2016) examined the genetic diversity within and between *A. rafaelensis* and *A. linifolius* and found that the two species are not genetically distinct, and their morphological characteristics fall along a continuum.

Description

Plants: caulescent perennials, 4–5 dm tall, broomy, with many old stems forming a thatch at base of plant; **leaves**: pinnately compound with 2–4 linear, involute leaflets or reduced to a simple, filiform leafstalk; **flowers**: usually pink-purple and white tipped, or white with blotched or spotted purple tips, in (5) 6–12 flowered racemes; **fruit**: legumes fleshy, sessile, mostly reflexed, although there may be some upright fruits on the same plant, fruits becoming leathery or woody, glabrous, and wrinkled with maturity (Ackerfield 2022; Spackman et al. 1997).

Similar species

Astragalus saurinus has fruits that are finely strigulose and fleshy, becoming papery, that are reticulate but not wrinkled (Ackerfield 2022).

Habitat

Gullied hills, washes, and talus under cliffs in semidesert scrub and pinyon-juniper woodland. Plants prefer seleniferous clayey, silty, or sandy soils. Sometimes with mountain mahogany (Spackman et al. 1997). Elevation 4,500–6,500 ft.

Phenology

Plants flower from late April through June and fruit in June.

Distribution

Regional endemic with a distribution centered along the margins of the Uncompahgre Plateau, including the canyons of the Dolores River and Dominguez and Escalante Canyons. In Colorado, known from Delta, Mesa, and Montrose counties. Also occurring in adjacent Utah.

Andrey Zharkikh

Bob Lagier

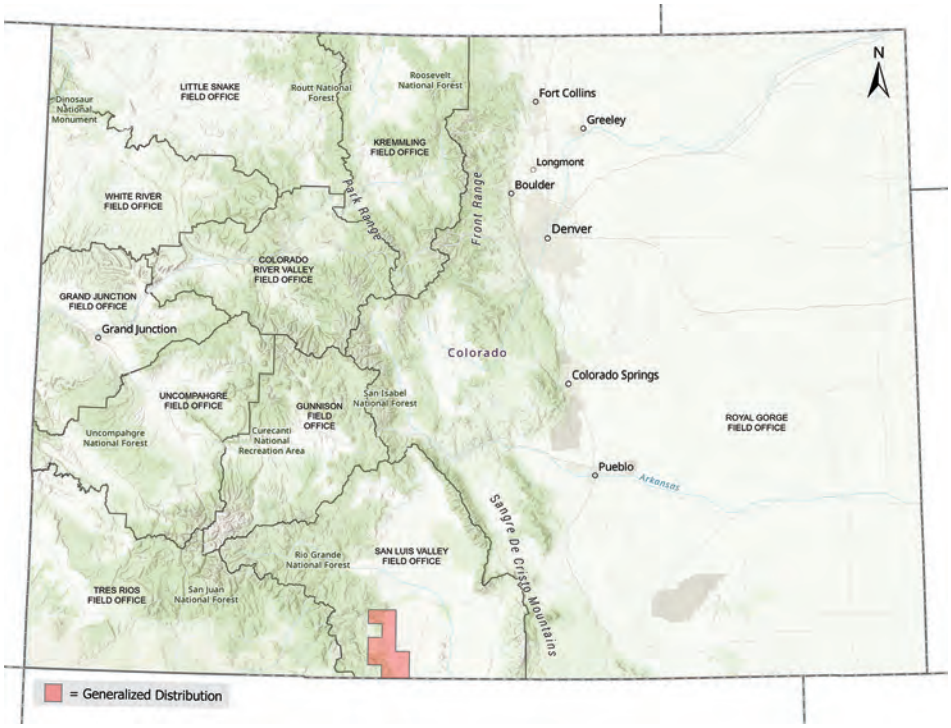
Andrey Zharkikh

Ernie Marx

Matt Langemeier

Astragalus ripleyi
Ripley's milkvetch

Phil Krening



Astragalus ripleyi Barneby
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G3/S2, BLM and Forest Service Sensitive
Occurrence by field office: San Luis Valley

Description

Plants: perennials with stout, erect, stiffly ascending stems 4–7 dm long, thinly strigulose nearly throughout with fine, straight, appressed hairs; **leaves**: pinnately compound with 13–17 leaflets, glabrous; **flowers**: pale lemon-yellow arranged in loosely flowered racemes; **fruits**: pendulous legumes, stipitate, laterally compressed and flat, sparsely hairy, not mottled (Ackerfield 2022).

Similar species

Astragalus lonchocarpus has cream to white flowers, 1–9 leaflets, and dorsiventrally compressed, sometimes mottled legumes. *A. drummondii* has dense, spreading pubescence and its legumes are obcordate in cross-section (Spackman et al. 1997; New Mexico Rare Plant Technical Council 1999; Ackerfield 2022).

Habitat

On volcanic substrates in open-canopy ponderosa pine-Arizona fescue savannah, or along the edges of closed canopy mixed coniferous woodlands where Arizona fescue is dominant (Spackman et al. 1997). Also found in open canopy pinyon-juniper and sagebrush habitats. Elevation 8,200–9,300 ft.

Phenology

Plants flower from June through early August

Distribution

Regional endemic found in the upper Rio Grande Basin in southern Colorado and northern New Mexico. All but one occurrence in Colorado is in Conejos County. There is one occurrence known from neighboring Archuleta County.

My-Lan Le

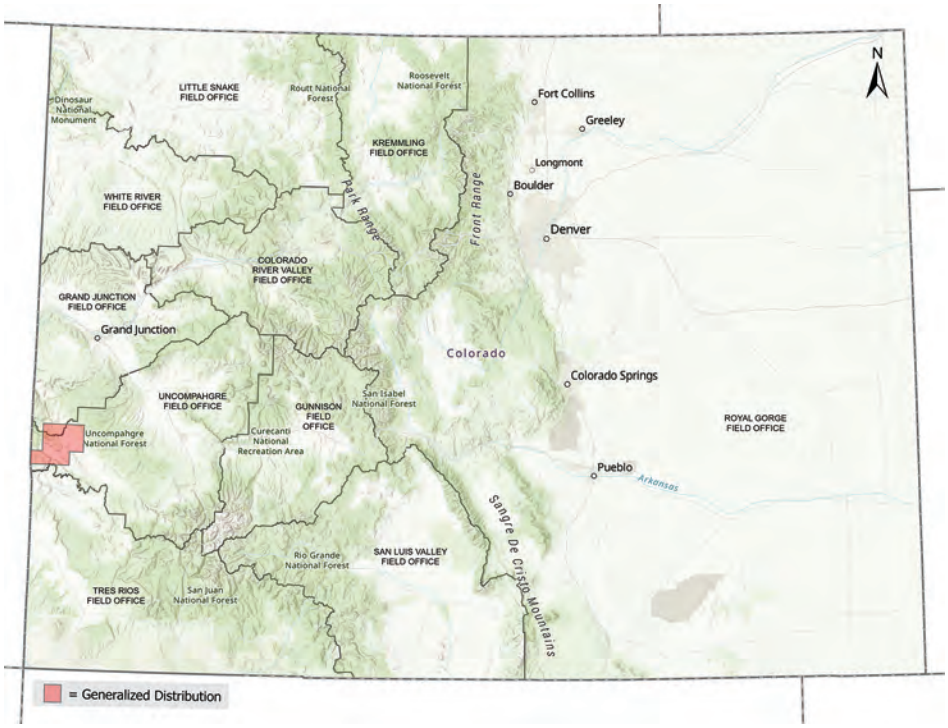
Cecilia Alexander

Savanna Smith

My-Lan Le

Astragalus sesquiflorus
Sandstone milkvetch

Carolyn Livensperger



Astragalus sesquiflorus S. Watson
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G3G4/S1, BLM Sensitive
Occurrence by field office: Uncompahgre

Description

Plants: Subacaulescent perennials, frequently prostrate, trailing, or mat-forming, 3–10 cm; **leaves**: pinnately compound with 7–11 obovate to narrowly elliptic leaflets, villous with dolabriform hairs; **flowers**: bicolored, light pink to purple with a maculate keel, arranged in an included or slightly exserted, loose, 1–3 flowered raceme; **fruits**: legumes, half-ovoid to oblanceolate-incurved, slightly inflated, laterally compressed dorsally, 6–10 x 3–4 mm, often mottled, stigulose-puberulent, papery at maturity (Ackerfield 2022).

Similar species

Astragalus kentrophyta ssp. *implexus* is caespitose or mat-forming and has spine-tipped leaflets and small white or pink-purple flowers (Ackerfield 2022; Spackman et al.1997).

Habitat

Red sandstone ledges, fissures of domed slickrock, talus under cliffs, and sometimes in sandy washes (Spackman et al. 1997). Rocky soil, rock crevices, usually with pinyon-juniper (Ackerfield 2022). Elevation 4,800–5,500 ft.

Phenology

Plants flower from May through August.

Distribution

Regional endemic native to the Colorado Plateau. Just barely entering Colorado in the Dolores River canyon country near Uravan in Montrose County. The majority of *Astragalus sesquiflorus'* distribution is located in southern Utah and the Navajo Nation in northeastern Arizona.

Andrey Zharkikh

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Andrey Zharkikh

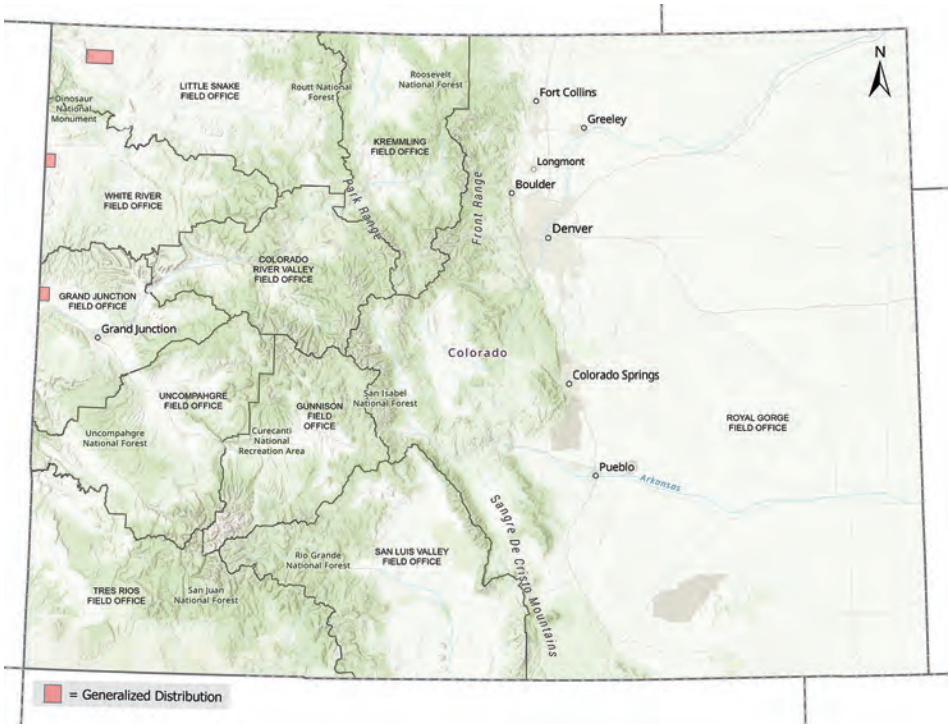
Andrey Zharkikh

Andrey Zharkikh

Andrey Zharkikh

Aulospermum duchesnensis
Duchesne springparsley

Scott F. Smith



Aulospermum duchesnensis Tidestr.
Apiaceae (carrot or parsley family)
Conservation ranks: NatureServe G3/S2, BLM Sensitive
Occurrence by field office: Little Snake

Taxonomy
Synonym = *Cymopterus duchesnensis* M.E. Jones

Description
Plants: 7–30 cm, pseudoscape absent; **leaves**: basal or a few cauline, pinnate, with ultimate leaf divisions, broad 3-toothed at apex; **leaflets**: broad with an acute, mucronate lobe; **inflorescence**: a compound umbel, involucel bractlets absent or 1–5 mm long, linear; **flowers**: petals yellow, stylopodium lacking; **fruit**: schizocarp, dorsal and lateral wings ribbed, papery (Ackerfield 2022).

Similar species
Duchesne springparsely is similar in appearance to other members of Apiaceae but has distinctive leaves. Separated in the key from Aletes which have ultimate leaf divisions that are ovate and often fan-shaped in outline.

Habitat
Found in cold desert shrub, sagebrush, and juniper communities on sandy, clay, and shale barrens of the Morrison, Uinta, Wasatch, and Green River Formations. Elevation 4,600–6,800 ft.

Phenology
Plants flower from April through May. Fruiting occurs late May through June.

Distribution
Regional endemic found in the Uinta Basin and surrounding area. Occurring in Moffat and Rio Blanco counties in Colorado. The center of *Aulospermum duchesnensis'* distribution is in Utah.

Scott F. Smith

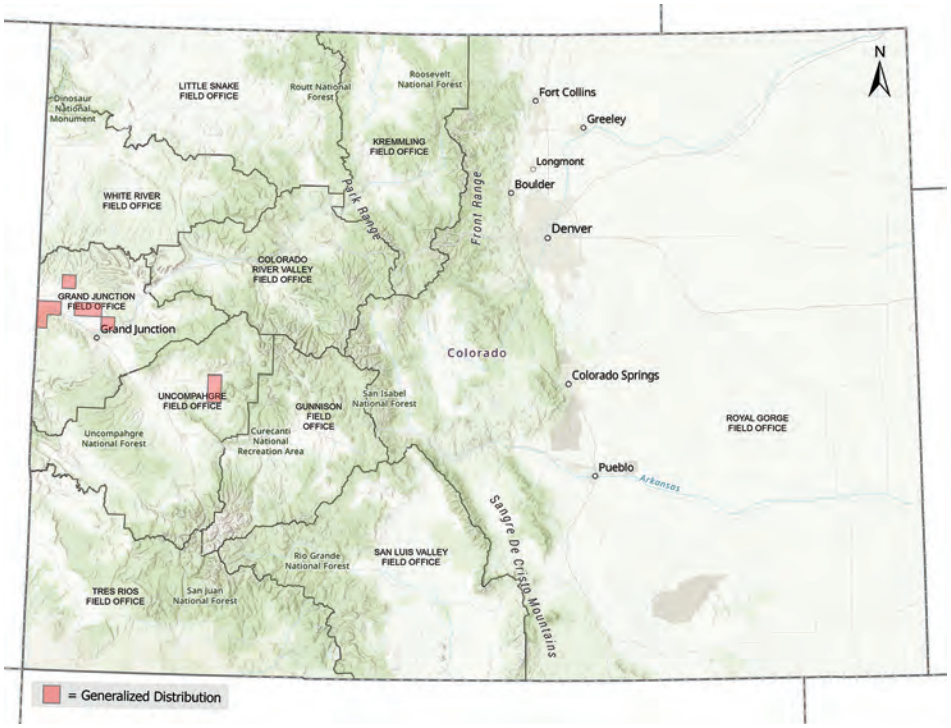
Bob Lagier

A. duchesnensis habitat, Scott F. Smith

Bob Lagier

Chylismia eastwoodiae
Grand Junction chylismia

Matt Langemeier



Chylismia eastwoodiae (Munz) W.L. Wagner & Hoch
Onagraceae (evening primrose family)
Conservation ranks: NatureServe G3/S2, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Grand Junction and Uncompahgre

Taxonomy

Synonym = *Cammisonia eastwoodiae* (Weber and Wittmann 2012)

Description

Plants: annual herbs from taproots, with stems that are simple or branched near the base, 40–60 cm tall; **leaves**: dark green, mostly basal, elliptic to ovate, entire or irregularly toothed; **flowers**: yellow with reddish spots, petals usually more than 6 mm long, arranged in a terminal raceme; **fruit**: a capsule, usually curved (Ackerfield 2022).

Similar species

Chylismia scapoidea var. *scapoidea* occurs in the same geography and habitat but has smaller petals (< 6 mm long) and the stigma is generally surrounded by the anthers. Whereas at maturity, the stigma of Grand Junction chylismia are held well above the anthers, and the petals are generally longer than 6 mm.

Habitat

In Colorado, this species is found on clay soils derived from Mancos Shale with *Atriplex gardneri* a dominant associate. Elevation 4,700–5,000 ft.

Phenology

Plants flower May through June.

Distribution

Regional endemic native to the Colorado Plateau. *Chylismia eastwoodiae* is known from Delta and Mesa counties in Colorado. It has also been recorded in Arizona and Utah.

Matt Berger

Zach Coury

Zach Coury

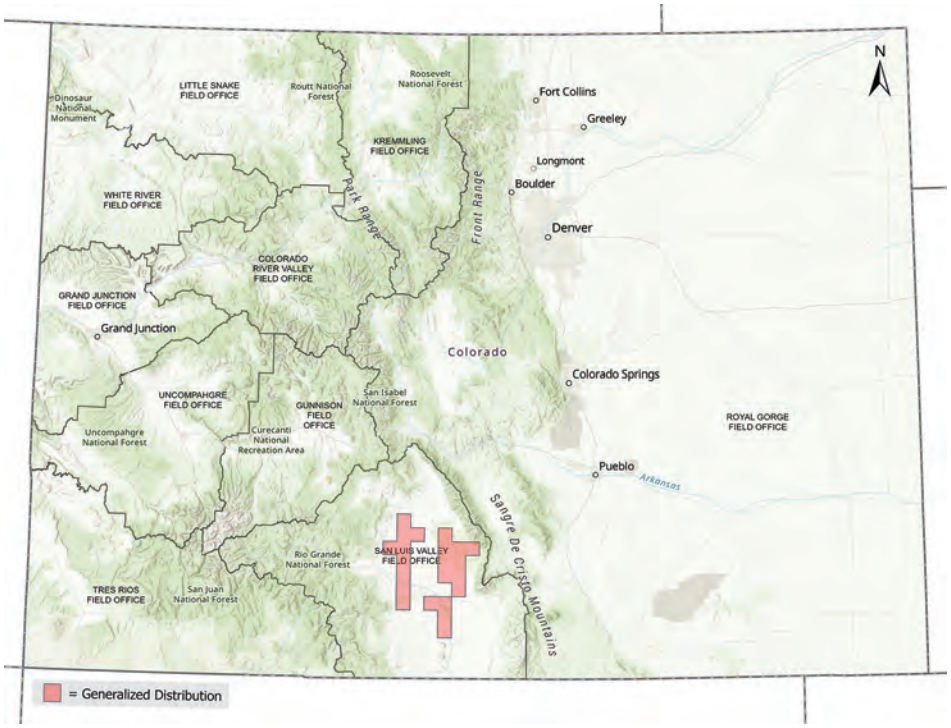
Zach Coury

Zach Coury

Walter Fertig

Cleomella multicaulis
Slender spiderflower

Phil Krening



Cleomella multicaulis (Moc. & Sessé ex DC.) J.C. Hall & Roalson
Capparaceae (caper family)
Conservation ranks: NatureServe G2G3/S2S3, BLM Sensitive, SWAP Tier 2
Occurrence by field office: San Luis Valley

Taxonomy

Synonyms = *Cleome multicaulis* and *Peritoma multicaulis*. Ackerfield (2015) lists as *Cleome multicaulis*. The Flora of North America (1993+) and Weber and Wittmann (2012) place *Cleome multicaulis* in the genus *Peritoma*.

Description

Plants: slender annual forbs with erect, unbranched, or sparingly branched leafy stems, 2–7 dm tall, glabrous; **leaves**: palmately compound with 3 narrow leaflets, 1–3 cm long; **flowers**: have 4 pink or pinkish-white petals 4–7 mm long and are borne on stalks in the axils of the leaves; **fruit**: narrow capsules, 6–18 mm long, obovoid to linear with a stalk-like base (gynophore) (Ackerfield 2022; Spackman et al. 1997).

Similar species

Cleomella serrulata is more robust, with wider leaflets (5–10 mm), larger flowers with stamens exceeding the petals, and larger fruits (Spackman et al. 1997).

Habitat

Restricted to saline or alkaline soils, around alkali sinks, ponds, alkaline meadows, or old lake beds. The surrounding plant community is saline bottomland shrubland (dominated by *Sarcobatus* and *Chrysothamnus*). The plant often grows in bands just above rushes (*Juncus* sp.) and may extend into greasewood and saltgrass (Graff 1992; Spackman et al. 1997; Colorado Natural Heritage Program 2023). Elevation 7,500–8,000 ft.

Phenology

Plants flower and fruit June through August.

Distribution

Occurring sporadically from Texas to Wyoming. *Cleomella multicaulis* has a center of distribution in Colorado's San Luis Valley in Alamosa, Conejos, Costilla, Rio Grande, and Saguache counties.

Ernie Marx

Matt Langemeier

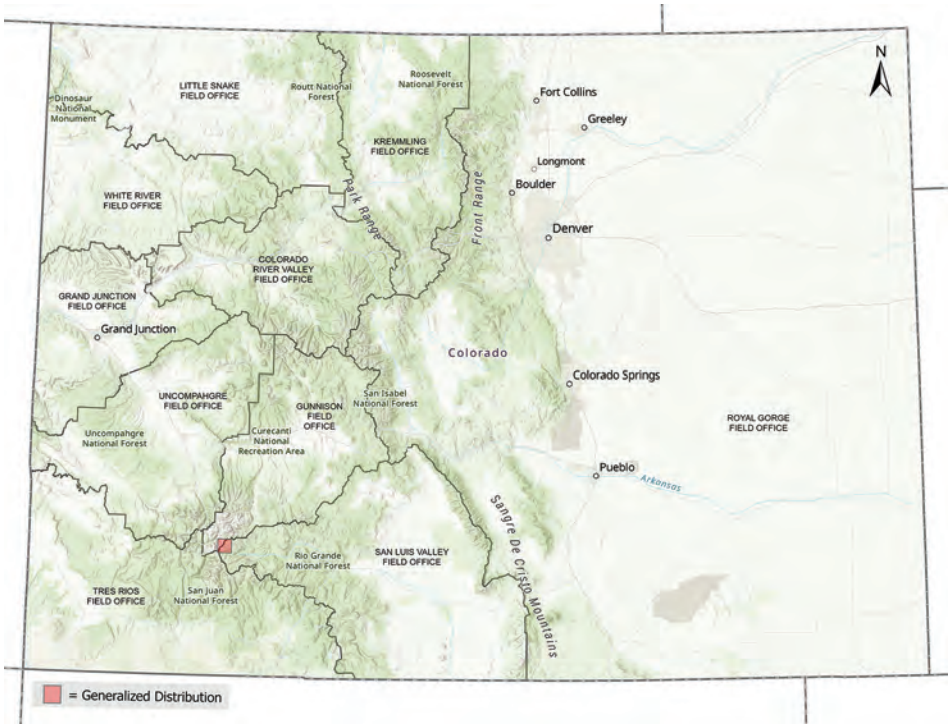
Phil Krening

Phil Krening

Taylor Applewhite

Descurainia kenheilii
Heil's tansy mustard

Scott F. Smith



Descurainia kenheilii Al-Shehbaz
Brassicaceae (mustard family)
Conservation ranks: NatureServe G2/S2, BLM Sensitive, SWAP Tier 1
Occurrence by field office: Gunnison and San Luis Valley

Description

Plants: diminutive, short-lived perennial 0.1–0.15 dm tall, erect, branched from the base, stems eglandular; **leaves**: basal leaves pinnate, ultimate leaf lobes broadly rounded; **flowers**: yellow, sparsely pubescent throughout; **fruit**: a torulose silique, fruiting pedicels erect to ascending, racemes not elongated in fruit (Al-Shehbaz 2007; Ackerfield 2022).

Similar species

The broad pinnate leaflets and alpine habitat of Heil's tansy mustard make it distinctive among members of the genus.

Habitat

Alpine tundra, talus slopes, and rock outcrops on an andesite porphyry and rhyolite tuff substrate in both undisturbed and disturbed areas; plants are taller and more robust where well-watered and with little competition (Al-Shehbaz 2007; O'Kane and Heil 2022). Elevation 11,500–12,500 ft.

Phenology

Plants flower August through September.

Distribution

Endemic to southwestern Colorado. *Descurainia kenheilii* has only been confirmed to occur at its type locality in San Juan County. Other locations have been identified from herbarium records peppered throughout the San Juan Mountains in Conejos, Hinsdale, Mineral, and Rio Grande Counties.

Scott F. Smith

Scott F. Smith

Scott F. Smith

Jennifer Ackerfield

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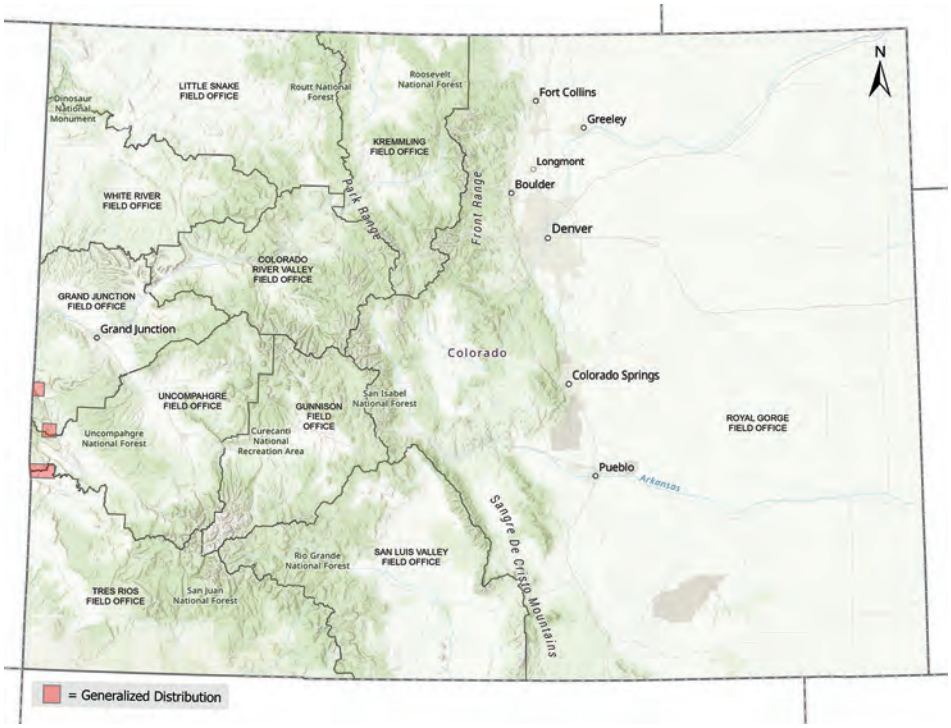
Erigeron kachinensis
Kachina fleabane

Zach Coury



Erigeron kachinensis S.L. Welsh & Moore
Asteraceae (sunflower family)
Conservation ranks: NatureServe G3/S1, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Grand Junction, Tres Rios, and Uncompahgre

Description

Plants: perennials from a branching caudex, glabrous, composed of several slender and lax stems up to 2 dm long, simple or few-branched above the middle; **stolons**: form late in the season; **stems**: 6–18 cm tall, usually leafy, spreading hirsute at least above; **leaves**: basal leaves broadly oblanceolate or ovate, margins entire, stem leaves several but not well-developed; **flowers**: 1-several flowering heads with yellow disk flowers and white to lavender or pinkish ray flowers, involucres are 3–4.5 mm high, less than 8 mm wide, finely glandular, pappus of approximately 15 slender bristles; **fruit**: an achene (Spackman et al. 1997; Ackerfield 2022).

Similar species

Kachina fleabane is distinct among other members of the Asteraceae in its habitat. No other aster is known to grow in hanging gardens within canyon alcoves, seeps, and springs.

Habitat

Wet, saline soils in alcoves, seeps, and hanging gardens on sandstone cliffs and canyon walls (Allphin and Harper 1994; Spackman et al. 1997; Ackerfield 2022; Culver and Lemly 2013). Surrounding plant community is largely pinyon-juniper. Elevation 4,800–6,600 ft.

Phenology

Plants flower from May through August. The plants often bloom twice during the year, once in the spring and again in late summer (Spackman et al. 1997).

Distribution

Regional endemic native to the Colorado Plateau with a center of distribution in the high elevation canyon country of Bears Ears National Monument in southeastern Utah. In Colorado, *Erigeron kachinensis* is known from the red rock canyons of the Dolores River in Mesa and Montrose counties.

Zach Coury

Savanna Smith

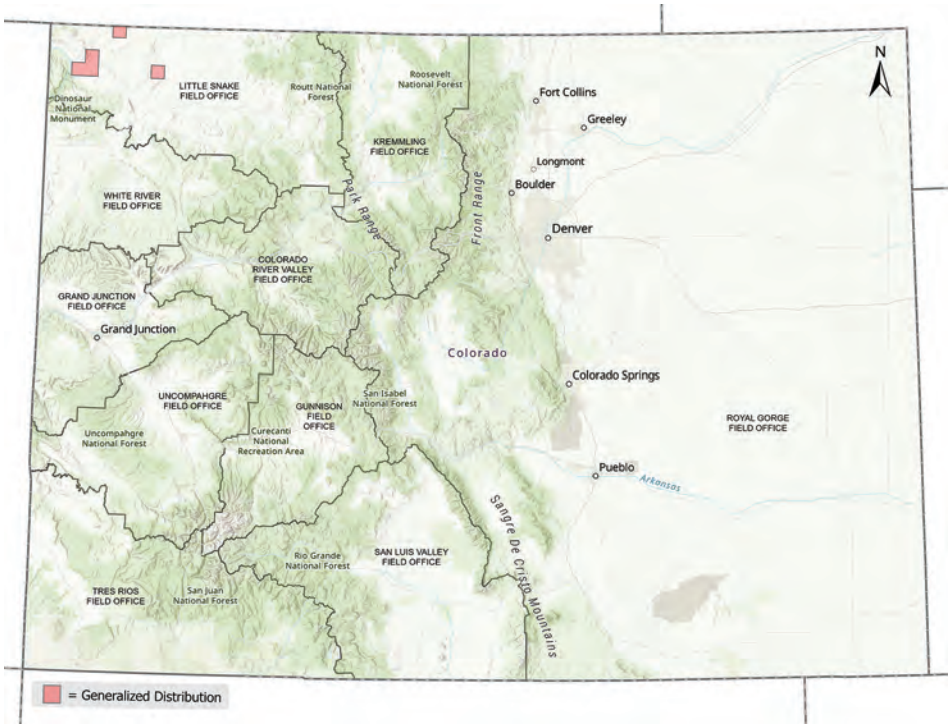
Zach Coury

Zach Coury

Zach Coury

Eriogonum acaule
Single-stem buckwheat

Phil Krening



Eriogonum acaule Nutt.
Polygonaceae (buckwheat family)
Conservation ranks: NatureServe G3/S1, BLM Sensitive
Occurrence by field office: Little Snake

Taxonomy
Synonym = *Eriogonum caespitosum* var. *acaule*

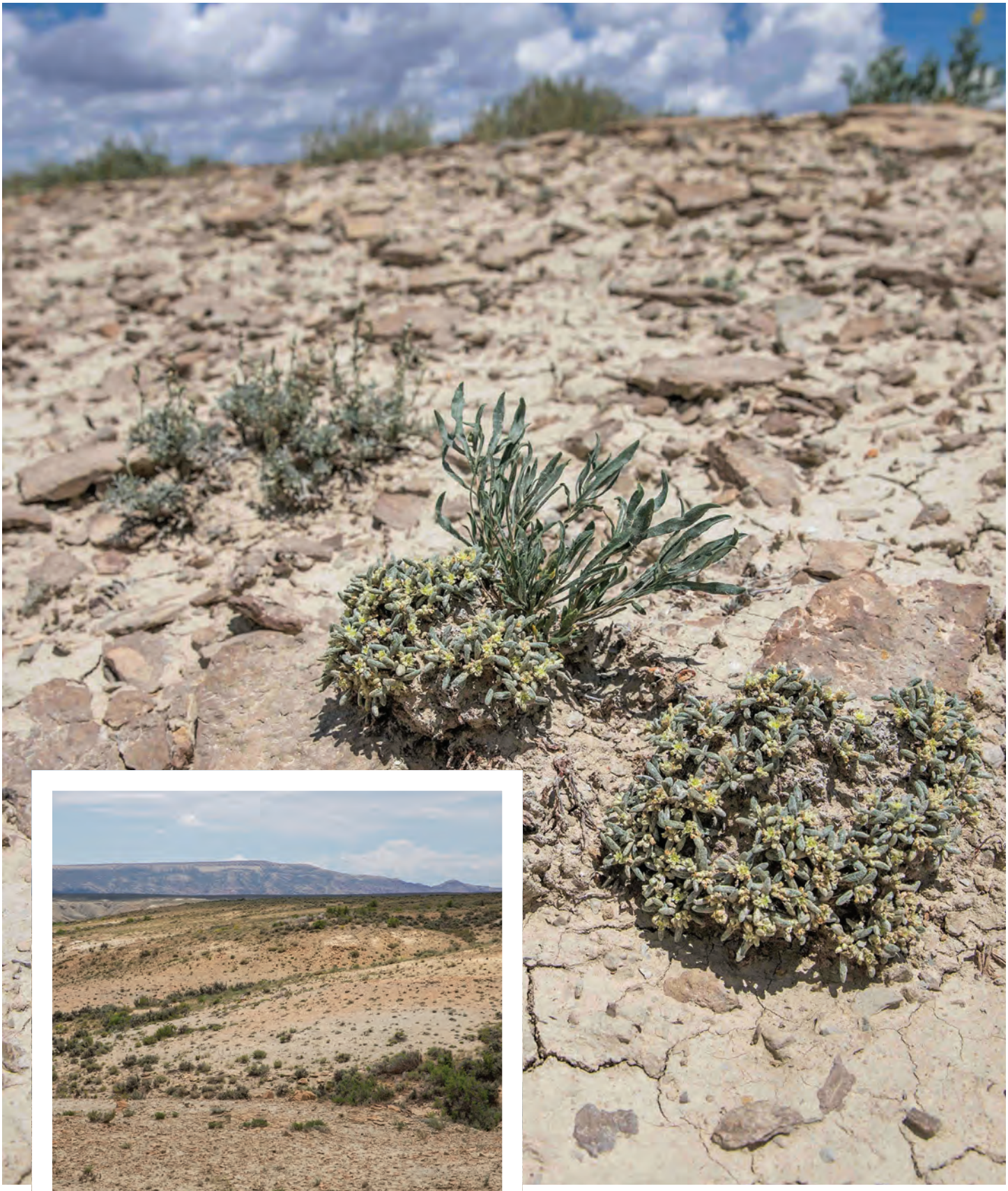
Description
Plants: low, mat-forming perennials 1.5–3 cm tall and up to 10–20 cm across; **leaves**: linear to oblanceolate, densely white tomentose, margins revolute; **flowers**: condensed, barely exceeding the leaves with short flowering stems with 6 light-yellow tepals, stamens slightly exserted; **fruit**: an achene 2–2.5 mm long (Ackerfield 2022).

Similar species
Eriogonum caespitosum is not known to occur in Colorado and can be distinguished when in flower by the presence of evident aerial, scape-like flowering stems with a capitate inflorescence. Single-stem buckwheat plants are cryptic and may be easily overlooked. To the untrained eye it may be assumed to be one of several more common mat-forming species found in similar habitats, including *Paronychia* spp. (Caryophyllaceae) which has flower parts in five rather than six.

Habitat
Barren hillsides and ridge crests in fine particle soils (Colorado Natural Heritage Program 2023; Weber and Wittmann 2012). Much of the surface geology throughout the Colorado portion of the distribution consists of Eocene sedimentary formations. Sandy, barren slopes, often with sparse sagebrush or saltbush (Ackerfield 2022; Colorado Natural Heritage Program 2023). Elevation 5,600–7,000 ft.

Phenology
Plants flower May through July.

Distribution
Regional endemic native to the greater Wyoming Basin. In Colorado, *Eriogonum acaule* is known only from extreme northern Moffat County.



Phil Krening

Phil Krening

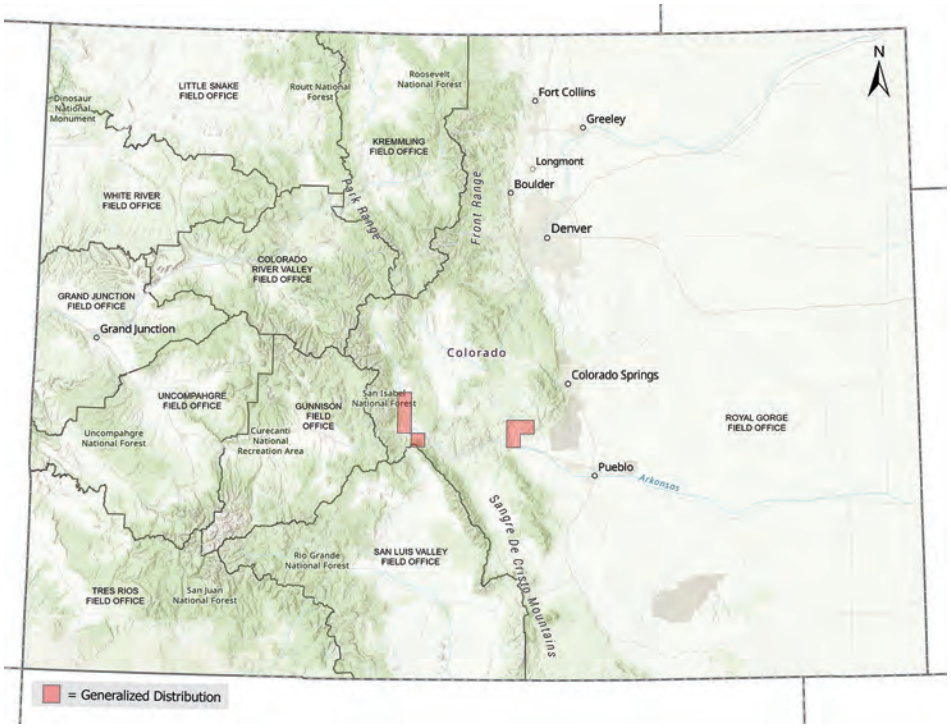
Phil Krening

Phil Krening

Phil Krening

Eriogonum brandegeei
Brandegee's buckwheat

Phil Krening



Eriogonum brandegeei Rydb.
Polygonaceae (buckwheat family)
Conservation ranks: NatureServe G2/S2, BLM and Forest Service Sensitive, SWAP Tier 1
Occurrence by field office: Royal Gorge

Description

Plants: spreading perennial herbs, typically 10–25 cm tall and ranging in size from 1 rosette to more than 2 ft in diameter, tap rooted; **leaves**: oblanceolate or elliptic, tomentose on both sides (densely white-hairy below, less so and greenish above); **flowers**: are borne in terminal clusters of white to pink or rose-colored flowers on leafless and unbranched glabrous to floccose stalks; **fruit**: an achene (Ackerfield 2022; Anderson 2006a).

Similar species

Brandegee's buckwheat is not likely to be confused with other members of the genus and can be distinguished from other local *Eriogonum* species by its leaves, which are tomentose on both sides and less so and greenish above and by its unbranched flowering stalk (Spackman et al. 1997).

Habitat

Shale barrens in pinyon-juniper and sagebrush communities. Limited to steep, erodible exposures of the Dry Union Formation and lower members of the Morrison Formation (O'Kane 1988; Spackman et al. 1997; Anderson 2006a). Elevation 5,800–7,600 ft.

Phenology

Plants flower from June through August. Flowering stalks may persist on a plant for a year.

Distribution

Endemic to Colorado. *Eriogonum brandegeei* has two known population clusters, one in Chaffee County and the other in Fremont County.

Ernie Marx

Andrey Zharkikh

Andrey Zharkikh

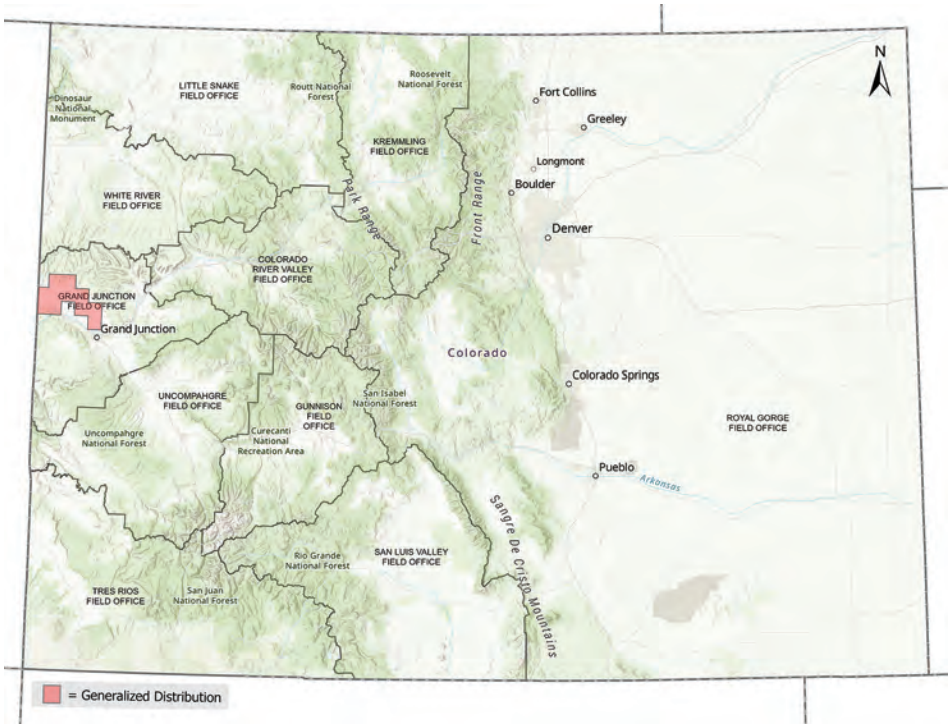
Ernie Marx

Exposed Dry Union Formation, *E. brandegeei* habitat, near Salida. Phil Krening

Phil Krening

Eriogonum contortum
Grand buckwheat

Matt Berger



Eriogonum contortum Small
Polygonaceae (buckwheat family)
Conservation ranks: NatureServe G3/S2, BLM Sensitive
Occurrence by field office: Grand Junction

Description

Plants: subshrubs to 1 dm, the bases gnarled and woody; **leaves**: linear to narrowly oblanceolate, densely tomentose below and greenish above, 1–3 cm long, margins tightly revolute; **flowers**: yellow, in short glabrous cymes; **fruit**: achenes, glabrous not winged (Spackman et al. 1997; Ackerfield 2022).

Similar species

Grand buckwheat is similar in general appearace to *Eriogonum brevicaule* var. *brevicaule* but has much tighter revolute margins. *Eriogonum pelinophilum* has white to cream or pink flowers, longer involucres (3–3.5 mm), and occurs farther south (Uncompahgre Valley) than Grand buckwheat (Spackman et al. 1997).

Habitat

Mancos Shale badlands, with shadscale and other salt desert shrub communities (Spackman et al. 1997). Elevation 4,500–5,100 ft.

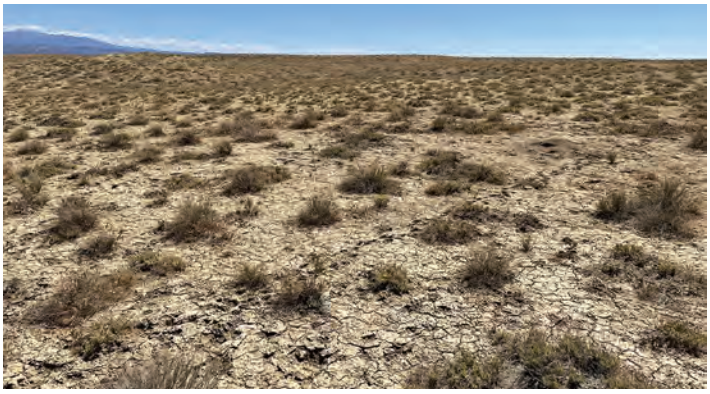
Phenology

Plants flower May through August.

Distribution

Regional endemic native to the Colorado Plateau. *Eriogonun contortum* primarily occurs along the Colorado River corridor from the Grand Valley in Mesa County, Colorado, downstream to near Moab, Utah.

Matt Berger



Matt Berger

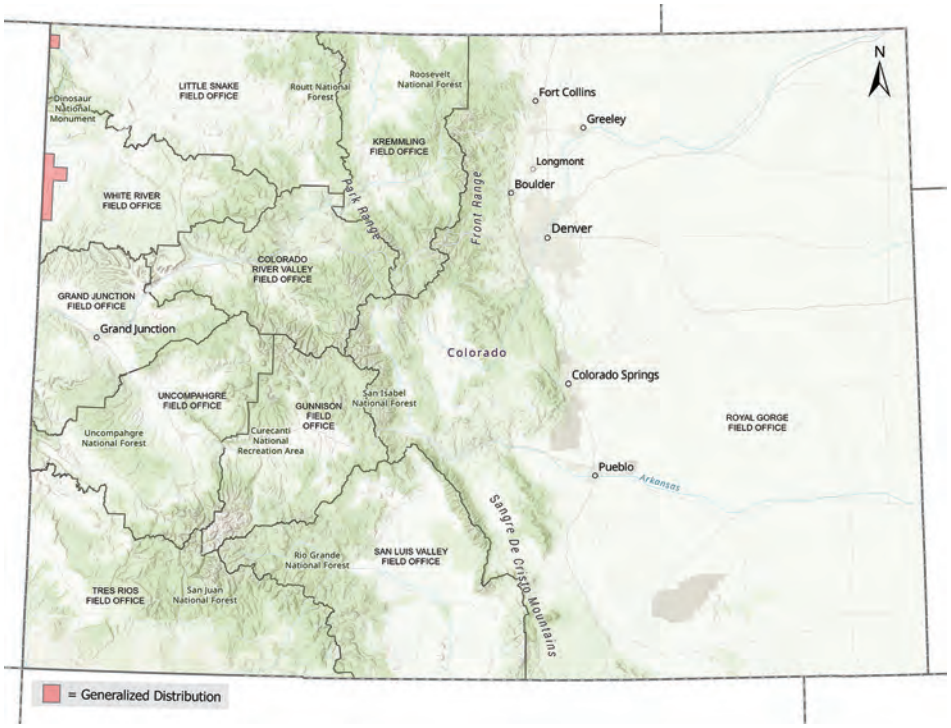
Matt Berger

Lindsey Conrad

Jessica Smith

Eriogonum ephedroides
Ephedra buckwheat

Phil Krening



Eriogonum ephedroides Reveal
Polygonaceae (buckwheat family)
Conservation ranks: NatureServe G3/S2, BLM Sensitive
Occurrence by field office: White River

Description

Plants: erect perennials 10–35 cm tall, often woody with a stout and well-developed root system; **leaves**: lanceolate, all basal, glabrate green above and densely tomentose below short, 2–3 cm long, and with petioles up to 4 cm long; **flowers**: pale yellow to cream-colored, arranged in open cymes that are much-branched in the upper two-thirds of the plant's height; **fruit**: an achene, glabrous (Ackerfield 2022).

Similar species

Eriogonum brevicaule var. *brevicaule* has longer, narrower leaves (3–10 x 0.1–0.7 cm) that are tomentose below and greenish and floccose above, a slender root system, and flowers arranged in an open cyme, tepals are bright yellow or rarely cream-colored.

Habitat

Found in sparse pinyon-juniper on barren, white shale slopes of exposed Green River Formation. A component of a specialized suite of oil shale endemics that includes *Aliciella stenothyrsa*, *Astragalus lutosus*, *Penstemon albifluvis*, and *Penstemon grahamii*. Elevation 5,500–6,500 ft.

Phenology

Plants flower from May through July.

Distribution

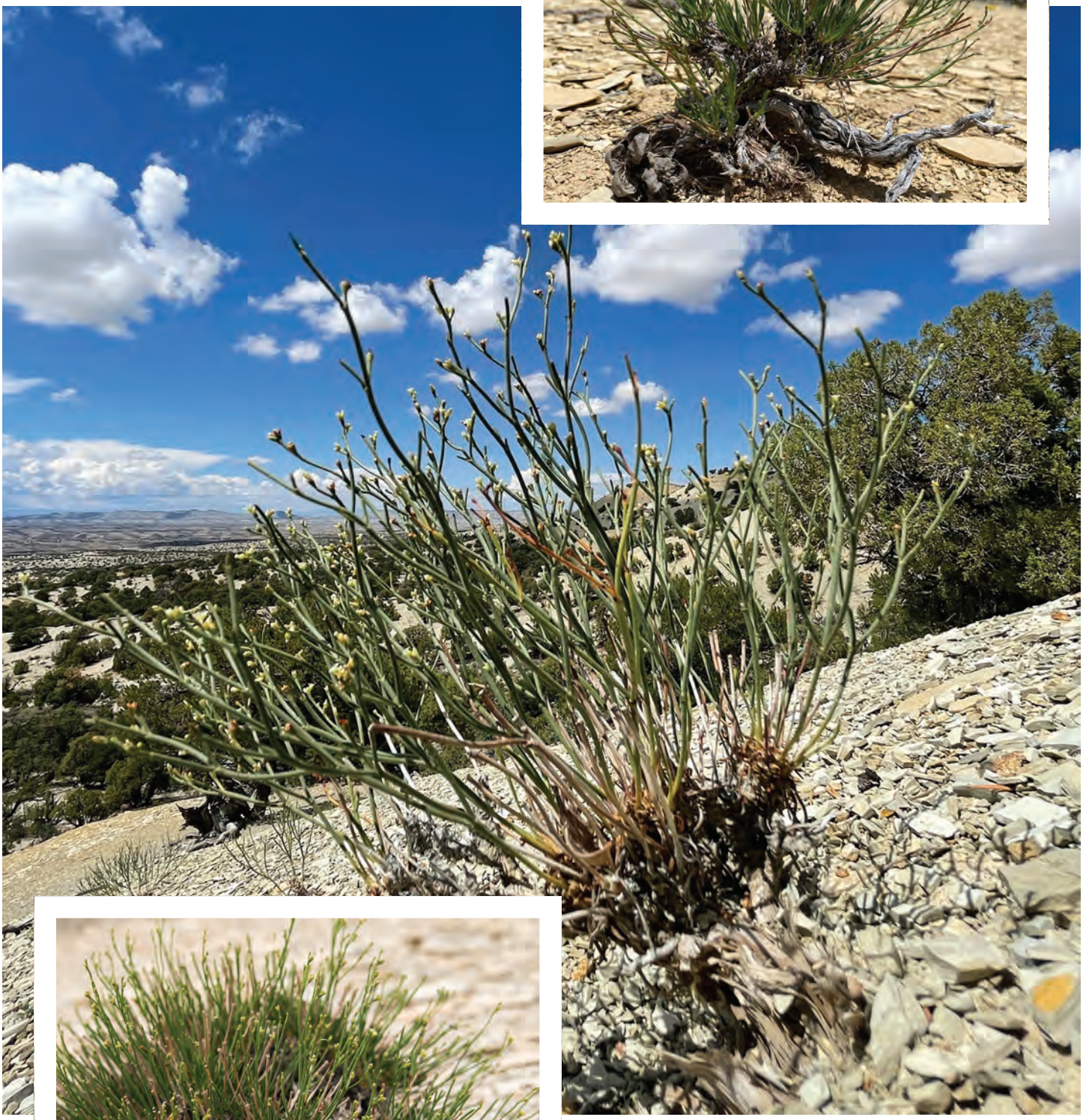
Regional endemic native to the Uinta Basin. *Eriogonum ephedroides* has a distribution centered in eastern Utah and barely enters Colorado where it is known to occur in western Moffat and Rio Blanco counties.

Phil Krening

Phil Krening

Phil Krening

Leo Hardin

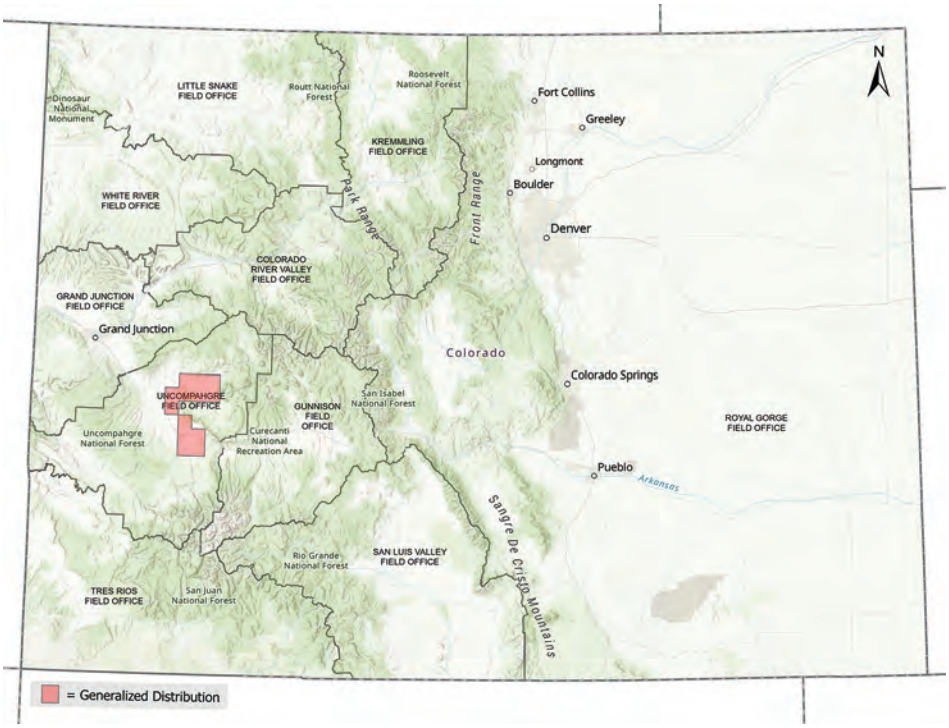


Zach Coury

Phil Krening

Eriogonum pelinophilum
Clay-loving wild buckwheat

Phil Krening



Eriogonum pelinophilum Reveal
Polygonaceae (buckwheat family)
Conservation ranks: ESA Endangered, NatureServe G1G2/S1S2, SWAP Tier 1
Occurrence by field office: Uncompahgre

Description

Plants: perennial subshrubs, up to 1.5 dm tall, woody with peeling bark when mature; **leaves**: oblanceolate, short and narrow (0.5–1.5 x 0.08–0.3 cm), cauline, densely tomentose below, glabrate and green above, the margins tightly revolute; **flowers**: white to cream-colored with pink veins, arranged in a compact cyme; **fruit**: an achene (Ackerfield 2022).

Similar species

Eriogonum contortum has yellow flowers and occurs further north (Mesa and Garfield counties). *E. clavellatum* is taller (1–2 dm), has larger involucres (4–4.5 mm long) an inflorescence that is umbellate or a compact cyme, and is only known from Montezuma County (Spackman et al. 1997).

Habitat

Shale barrens derived from the Mancos Formation (Peterson 1982). Sparsely vegetated and seleniferous abode soils that are high in clay content and form varied topography ranging from steep badlands, to gently rolling hills, shallow swales, and clay flats. Habitat modeling has demonstrated a high degree of overlap between occurrences of *E. pelinophilum* and the Smoky Hill Member of the Mancos Formation in particular (Zimmer et al. 2023). The most conspicuous components of the vegetative community are a suite of halophytic shrubs and subshrubs including *Atriplex confertifolia*, *Atriplex gardneri*, *Atriplex corrugata*, *Artemisia spinescens*, and the nonnative *Halogeton glomeratus*. Higher elevation sites near Montrose display greater vegetative diversity and include patchy *Artemisia nova* communities. Other commonly associated species include *Achnatherum hymenoides* and *Xylorhiza venusta* (Krening et al. 2023). Elevation 5,500–6,000 ft.

Phenology

Plants flower from mid-June through late July and fruit in August. Has been observed to flower again into September.

Distribution

Endemic to Colorado. *Eriogonum pelinophilum* is narrowly restricted within the Uncompahgre Valley in Delta and Montrose counties.

Raquel Wertsbaugh

David Anderson

Phil Krening

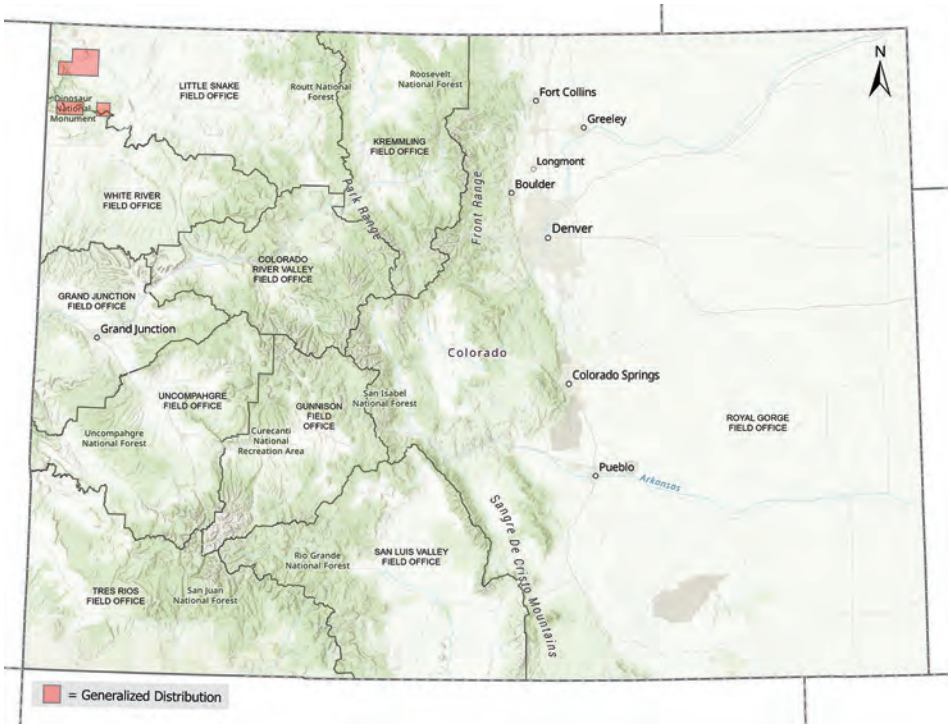
Raquel Wertsbaugh

Phil Krening

My-Lan Le

Eriogonum tumulosum
Woodside buckwheat

Ernie Marx



Eriogonum tumulosum (Barneby) Reveal
Polygonaceae (buckwheat family)
Conservation ranks: NatureServe G3Q/S2S3, BLM Sensitive
Occurrence by field office: Little Snake

Description

Plants: mat-forming perennials; **leaves**: villous, silky tomentose, small (0.3–0.5 x 0.07–0.1 cm), oblanceolate to elliptic; **flowers**: white to pink, 3–4 mm long, hairy, the inflorescence not or barely exceeding leaves, capitate; **fruit**: an achene (Ackerfield 2022; Flora of North America 1993+).

Similar species

Eriogonum acaule differs in having densely tomentose, oblanceolate leaves with revolute margins, and smaller flowers with yellow tepals.

Habitat

Mixed desert shrub and pinyon-juniper woodlands, on rocky outcrops, sedimentary gravels, or clays (Spackman et al. 1997). Elevation 5,400–6,500 ft.

Phenology

Plants flower late April through early July; peak flowering is usually in May (Spackman et al. 1997).

Distribution

Regional endemic known from Moffat County in Colorado where it occurs in and around Dinosaur National Monument. The core of *Eriogonum tumlulosum's* distribution is located in eastern and central Utah.

Ernie Marx

Leo Hardin

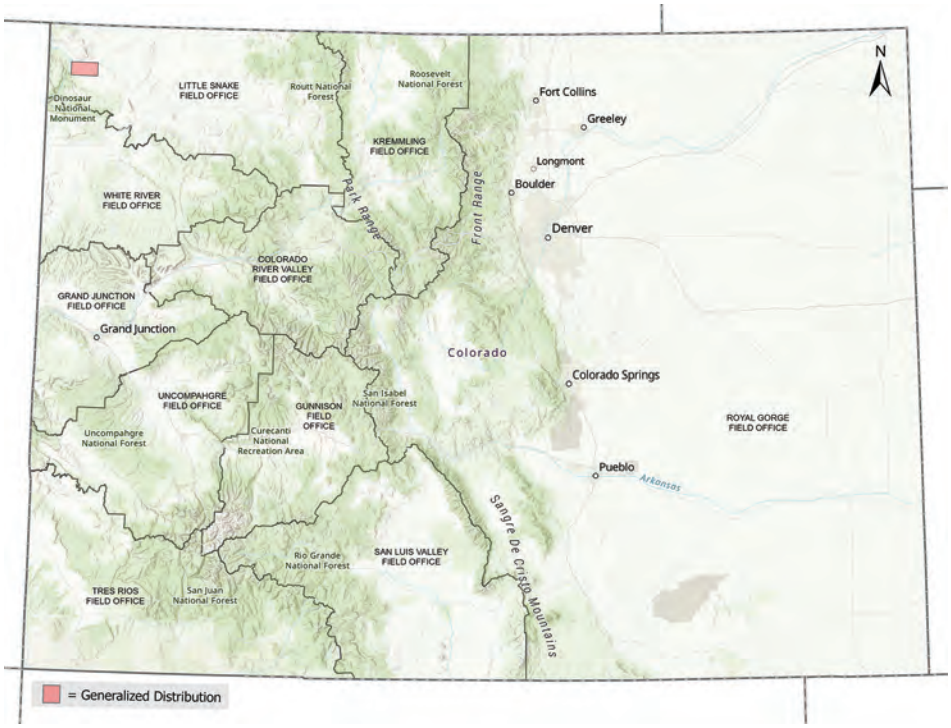
Leo Hardin

Leo Hardin

Savanna Smith

Eriogonum viridulum
Clay hill buckwheat

Andrey Zharkikh



Eriogonum viridulum Reveal
Polygonaceae (buckwheat family)
Conservation ranks: NatureServe G4/S1, BLM Sensitive
Occurrence by field office: Little Snake

Taxonomy

Synonym = *Eriogonum brevicaule* var. *viridulum*. Ackerfield (2022) does not include this taxon. Flora of North America (1993+) considers this to be known only from Duchesne and Uintah counties, Utah. This taxon was reportedly relocated in Moffat County, Colorado, in 2022 (CNHP 2023).

Description

Plants: perennials, with numerous spreading bright green aerial stems, glabrous; **leaves**: sheathing, one per node, linear or rarely narrowly elliptic, densely white tomentose below and glabrous and green above, margins tightly revolute; **flowers**: yellow, arranged in slender erect cymes that exceed the leaves; **fruit**: an achene (Flora of North America 1993+).

Similar species

Clay hill buckwheat has a distinctive upright inflorescence composed of numerous, bright green and glabrous branches bearing essentially sessile involucres. These features and the linear to narrowly elliptic leaf blades that are typically tightly revolute combine to distinguish the species from the related *E. brevicaule* var. *brevicaule* (Flora of North America 1993+).

Habitat

Sandy or silty flats or clay slopes and hills, in saltbush or sagebrush communities, or in pinyon-juniper woodlands (Flora of North America 1993+). Elevation 5,600–5,900 ft.

Distribution

Regional endemic native to the Uinta Basin. *Eriogonum viridulum* is known from a single location in Moffat County, Colorado.

Matt Reala

outstanding photo need

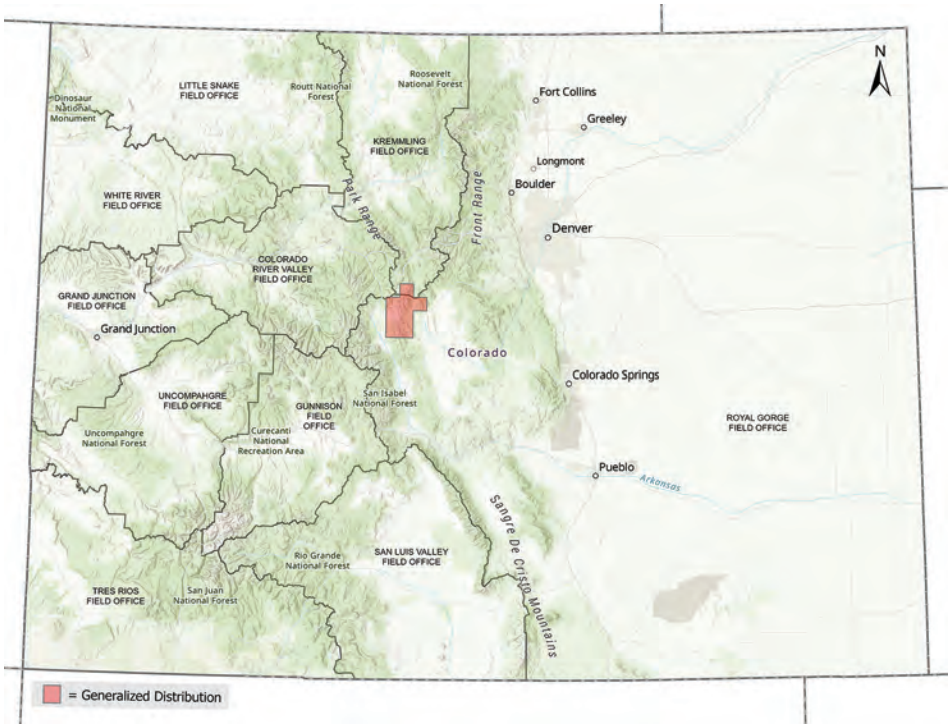
Matt Reala

Zach Coury

outstanding photo need

Eutrema penlandii
Mosquito Range mustard

Phil Krening



Eutrema penlandii Rollins
Brassicaceae (mustard family)
Conservation ranks: ESA Threatened, NatureServe G2/S2, SWAP Tier 1
Occurrence by field office: Royal Gorge

Taxonomy

Synonym = *Eutrema edwardsii* (Weber and Wittmann 2012). Genetic investigation has demonstrated that *Eutrema penlandii* warrants designation at the species level and is distinct from *E. edwardsii*.

Description

Plants: diminutive, small herbaceous perennial from 1–5 cm, elongating in fruit to 15 cm, glabrous; **leaves**: dimorphic, basal leaves heart-shaped, margins often tapering unevenly to long petioles, cauline leaves sessile, lanceolate to elliptic; **flowers**: tiny, white, four-petaled in tight clusters; **fruit**: siliques, green and glabrous, erect, maturing purple black, stipitate, nearly cylindrical (Ackerfield 2022; BLM 2023).

Similar species

There are several other members of the Brassicaceae that co-occur in Colorado's alpine. Mosquito Range mustard may be confused with several species of *Draba* which all have hairs (Naumann 1988). *Noccaea fendleri* has dark, obcordate fruits, broadest at the apex, and long-styled (1–3 mm), as opposed to the green, elliptical fruits and barely evident style of *Eutrema*.

Habitat

Seasonally saturated alpine tundra above 11,800 ft. In leeward glaciated basins, frequently downslope from perennial or persistent snowfields or remnant cornices, in moss-covered peat fens, bogs, or marshes on alpine benches or adjacent to tarns. Elevation 11,800–14,000 ft.

Phenology

Flowering may fluctuate by as much as a month based on elevation, spring snowpack, runoff, and summer temperatures (BLM 2023). Frequently observed flowering from late June through late July. Plants fruit in August.

Distribution

Endemic to Colorado. *Eutrema penlandii* is limited to a 40 km stretch of the Continental Divide as it snakes through the Mosquito Range above 12,000 feet in Lake, Park, and Summit counties.

Jeffrey Flory

Phil Krening

Scott F. Smith

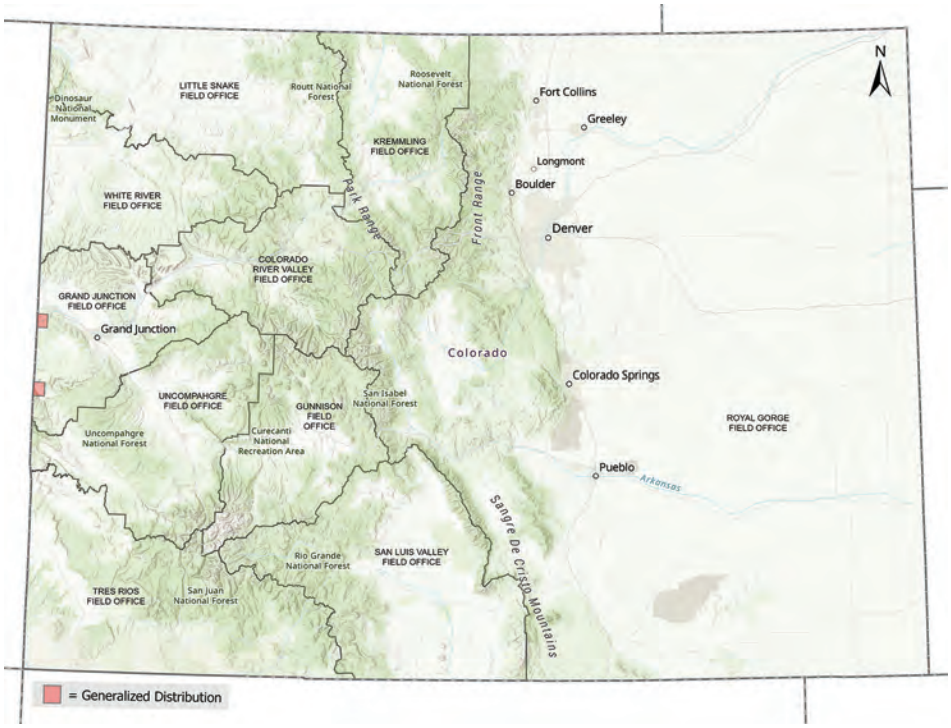
Phil Krening

Phil Krening

Phil Krening

Frasera paniculata
Tufted frasera

Scott F. Smith



Frasera paniculata Torr.
Gentianaceae (gentian family)
Conservation ranks: NatureServe G4/S1, BLM Sensitive
Occurrence by field office: Grand Junction

Taxonomy
Synonym = *Swertia utahensis*

Description
Plants: monocarpic perennials, 7–15 dm; **leaves**: mostly basal, opposite, lanceolate to oblanceolate, white-margined, reduced upward; **flowers**: arranged in a pyramidal paniculate cyme, 4-merous, white or yellowish-green, flecked with dark green spots, and a solitary, fringed gland on each lobe; **fruit**: a capsule.

Similar species
Not likely to be confused with other species in this area. May be mistaken for members of Asparagaceae (e.g., *Yucca* spp.) at first glance.

Habitat
Desert scrub and pinyon-juniper communities, often in open sand. Elevation 4,500–4,700 ft.

Phenology
Plants flower June through early July.

Distribution
Regional endemic native to the Colorado Plateau. *Frasera paniculata* barely enters western Colorado where it is found along the Utah border in Mesa County. Primarily occurring in southeastern Utah and the Navajo Nation in northeastern Arizona and northwestern New Mexico.

Matt Berger

Scott F. Smith

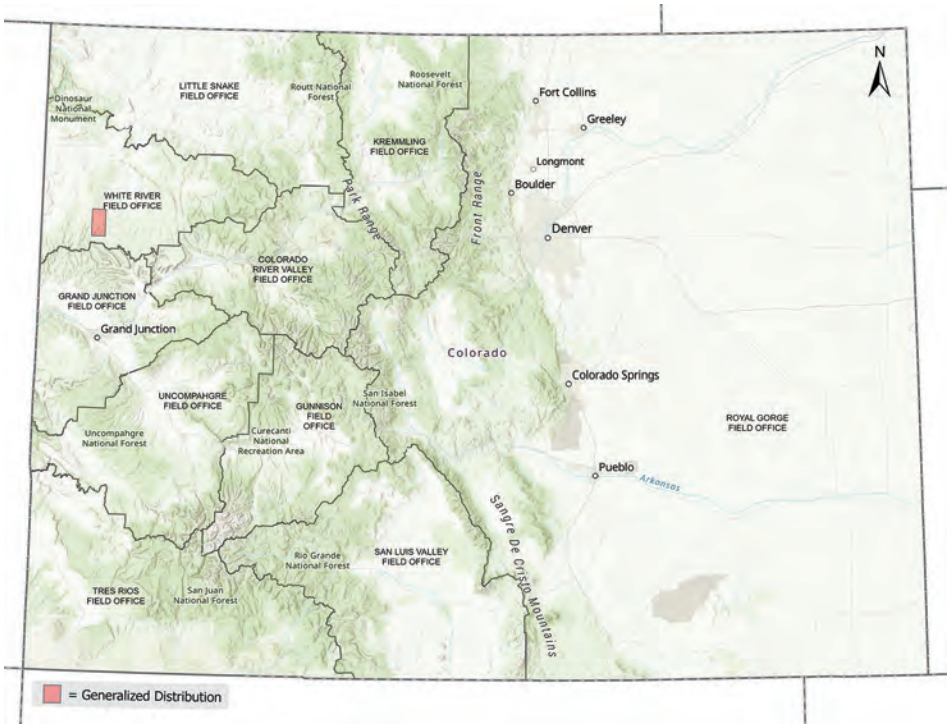
Scott F. Smith

Matt Berger

Zach Coury

Gentianella tortuosa
Cathedral Bluff dwarf gentian

evolvulux



Gentianella tortuosa (M.E. Jones) J.M. Gillett
Gentianaceae (gentian family)
Conservation ranks: NatureServe G3?/S1, BLM Sensitive
Occurrence by field office: White River

Description

Plants: clump-forming annuals to 10 cm tall with much-branched stems, spreading to erect; **leaves**: lanceolate, oblong or narrowly elliptic (0.5–35 mm long), sometimes appearing purplish; **flowers**: in cymes or solitary in the leaf axils, corolla white, yellowish or blue 5.5–8.5 mm, tubular, lobes as long or longer than the tube, each lobe with two fringed scales; **fruit**: a capsule (Ackerfield 2022).

Similar species

Cathedral Bluff dwarf gentian is not likely to be confused with other members of the genus in Colorado.

Habitat

Barren shale knolls and slopes of the Green River Formation in Colorado (Spackman et al. 1997; Ackerfield 2022). Elevation 8,500–10,800 ft.

Phenology

Flowers form in July and August; capsules form in August and September (Colorado Natural Heritage Program 2023).

Distribution

Occurring sporadically from Las Vegas, Nevada, to Colorado's western slope, with a distribution centered in central Utah's high country. In Colorado, *Gentianella tortuosa* is known only from the Cathedral Bluffs in Rio Blanco County.

Ernie Marx

Ernie Marx

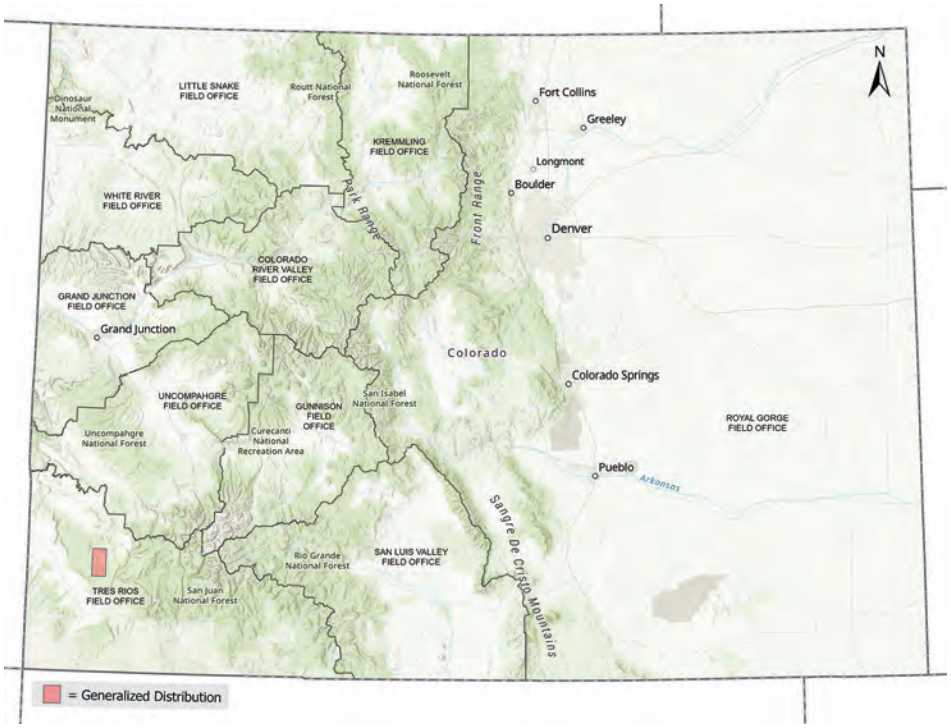
Matt Berger

Jessica Smith

Leo Hardin

Gutierrezia elegans
Lone Mesa snakeweed

Shelley Silva



Gutierrezia elegans A. Schneider & P. Lyon
Asteraceae (sunflower family)
Conservation ranks: NatureServe G1/S1, BLM and Forest Service Sensitive, SWAP Tier 1
Occurrence by field office: Tres Rios

Description

Plants: low, compact subshrubs with woody caudex branches (0.7–1.5 dm); **leaves**: linear to lanceolate, simple and entire; **flowers**: yellow, in short pedunculate heads, involucre bracts gland-dotted; **fruit**: a cypsela (Ackerfield 2022).

Similar species

Lone Mesa snakeweed differs from other members of the genus by having short pedunculate heads, whereas other members of the genus have sessile or subsessile heads. May be easily overlooked as one of many common members of Asteraceae (e.g., rabbitbrush (*Chrysothamnus* spp.)), that occur in similar habitats across the landscape.

Habitat

Sparsely vegetated exposures of Mancos Shale. Elevation 7,500–8,000 ft.

Phenology

Plants flower July through early September and fruits are produced in August and September (Colorado Natural Heritage Program 2023).

Distribution

Endemic to Colorado. *Gutierrezia elegans* is known only from Lone Mesa State Park in Dolores County.

Jared Shorma

outstanding photo need

Jared Shorma

Jared Shorma

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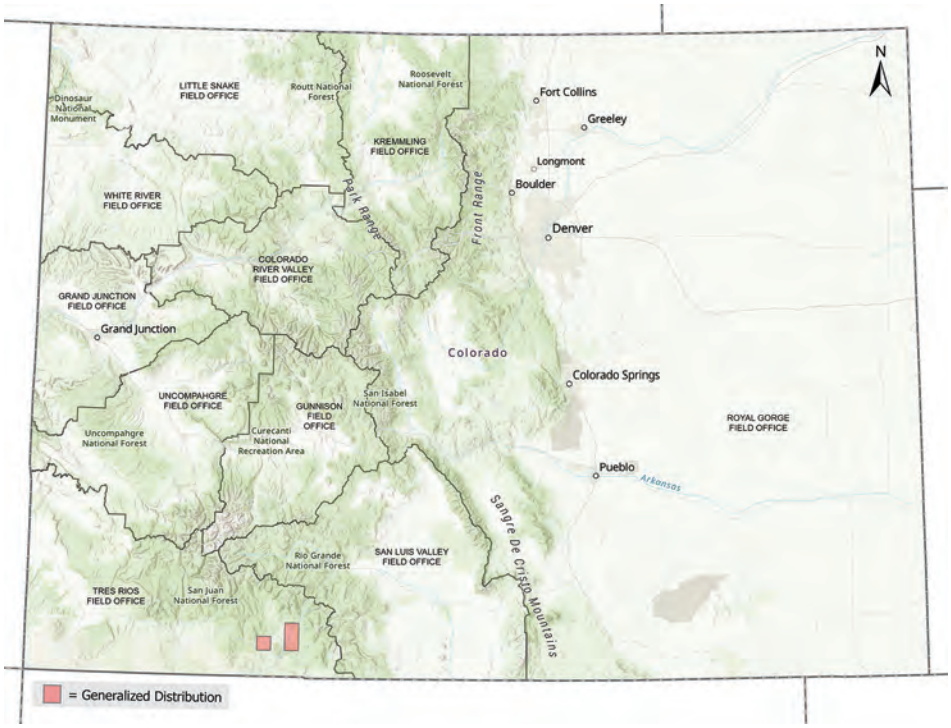
Ipomopsis polyantha
Pagosa skyrocket

Nick Moore



Ipomopsis polyantha (Rydb.) V.E. Grant
Polemoniaceae (phlox family)
Conservation ranks: ESA Endangered, NatureServe G1G2/S1S2, SWAP Tier 1
Occurrence by field office: Tres Rios

Description

Plants: herbaceous, biennials or short-lived monocarpic perennials, more than 20 cm tall, with densely glandular to hairy stems; **leaves**: pinnatifid, with 5 narrow linear segments; **flowers**: white or pale violet with purple or pink spots in an elongated thyrse, corolla is short tubular, and stamens are strongly exserted; **fruit**: a capsule (Ackerfield 2022).

Similar species

Pagosa skyrocket is not likely to be mistaken in appropriate habitat and range in Colorado.

Habitat

Occurs on rocky clay soils of Mancos Shale in lower montane foothills, typically on road shoulders or other places with moderate soil disturbance. Sites may be quite weedy. Frequently within ponderosa pine woodlands with montane grassland understory (Anderson 2004; Anderson 1988). Elevation 6,800–7,300 ft.

Phenology

Plants produce flowers and fruit late May through early August. Since the plants are most conspicuous during flowering, the best inventory period is late May to late July (Anderson 1988).

Distribution

Endemic to Colorado. *Ipomopsis polyantha* is narrowly restricted and known only to occur in Archuleta County.

Raquel Wertsbaugh

Andy Butler

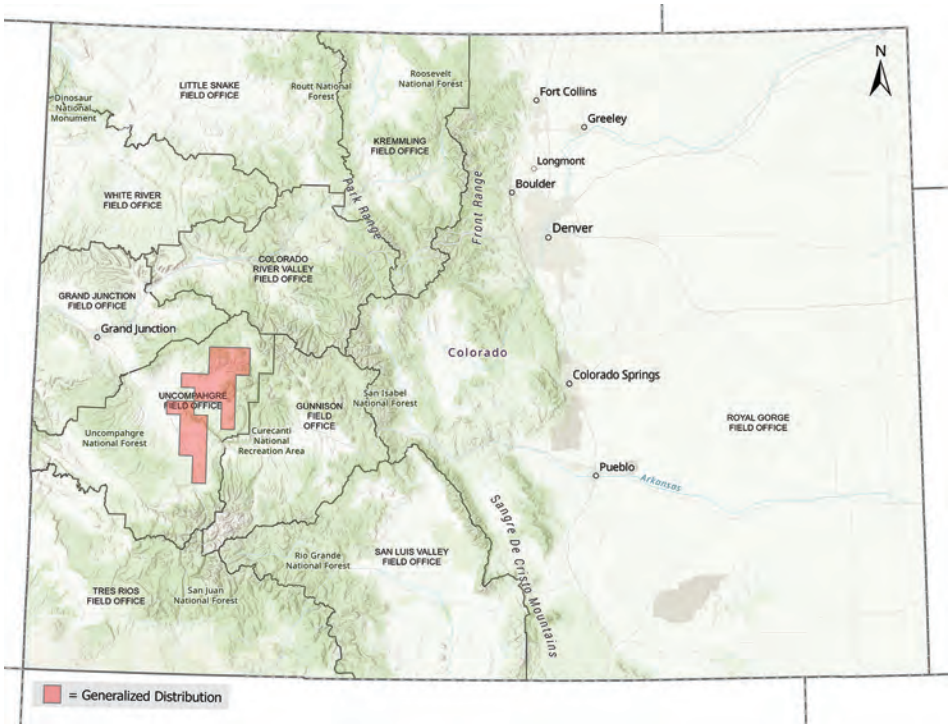
Sequoia Janirella Wrens

Savanna Smith

Sequoia Janirella Wrens

Lomatium concinnum
Colorado desert parsley

Scott F. Smith



Lomatium concinnum (Osterh.) Mathias
Apiaceae (parsely or carrot family)
Conservation ranks: NatureServe G2G3/S2S3, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Uncompahgre

Taxonomy
Synonym = *Cymopterus glomeratus* var. *concinnus*

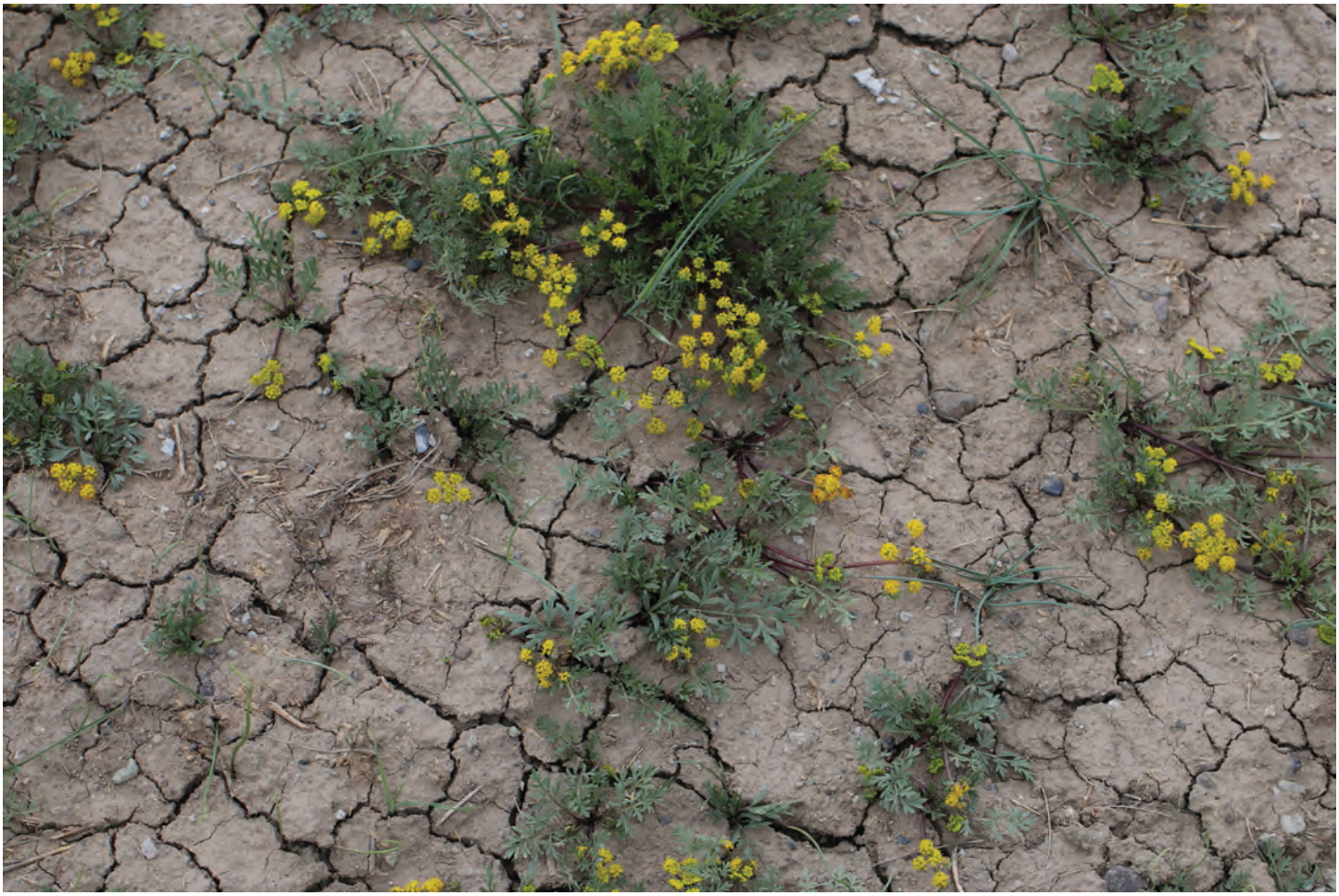
Description
Plants: perennials, 12–25 cm, glabrous, pseudoscape absent; **leaves**: mostly bipinnate, the ultimate divisions narrowly elliptic or linear-lanceolate, 2–11 mm long; **flowers**: yellow, in compound umbels, rays subequal, 2.5–4 cm long, involucral bractlets ovate to narrowly elliptic, often fused below; **fruit**: a schizocarp, flattened with lateral wings (Ackerfield 2022).

Similar species
Vesper bulbosus (syn. *Cymopterus bulbosus*) has greyish foliage, broader leaflets, white/purple flowers, and four-winged fruits. In general, the fruits are the best way to distinguish species of *Lomatium* from *Cymopterus*. The latter have fruits that are compressed dorsally, with both dorsal and lateral winged ribs (Ackerfield 2022; Spackman et al. 1997).

Habitat
Found on barren adobe soils derived from shales of the Mancos Formation. In salt desert shrub-dominated communities occasionally with clay-loving wild buckwheat (*Eriogonum pelinophilum*). Elevation 5,500–7,000 ft.

Phenology
Plants flower and fruit in May.

Distribution
Endemic to Colorado. *Lomatium concinnum* is known only to occur in the greater Uncompahgre Valley in Delta, Montrose, and Ouray counties.



Scott F. Smith

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Judith Ellen Lopez

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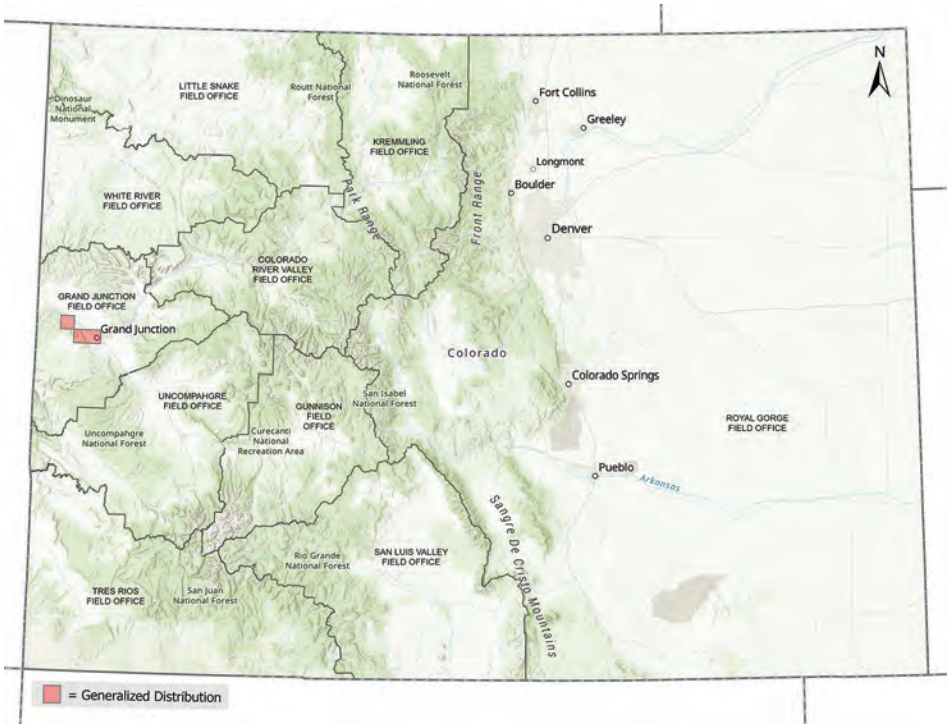
Lomatium latilobum
Canyonlands lomatium

Anders Hastings



Lomatium latilobum (Rydb.) Mathias
Apiaceae (parsely or carrot family)
Conservation ranks: NatureServe G2/S2, BLM Sensitive, SWAP Tier 1
Occurrence by field office: Grand Junction

Taxonomy
Synonym = *Aletes latilobus*

Description
Plants: acaulescent perennials, 6–30 cm tall, glabrous, forming loose mats with numerous short caudices, often with the thatch of previous years dried leaves; **leaves**: basal, once pinnately compound with lanceolate leaflets, 5–40 mm long and more than 5 mm wide, ultimate leaf divisions broad; **flowers**: yellow, in compound umbels, involucel bractlets are conspicuous and longer than the flowers, 5–10 mm in length; **fruit**: a schizocarp with lateral wings 1 mm wide. Rumored to have a strong lemony or anise scent (Ackerfield 2022; Spackman et al. 1997).

Similar species
Other members of the genus *Lomatium* have narrower leaflets.

Habitat
Found in pinyon-juniper and desert shrub communities in canyons often on sandstone ledges and in sandy soils derived from Entrada Sandstone or the contact of Wingate Sandstone and the Chinle Formation (Spackman et al. 1997; Ackerfield 2022). Elevation 5,000–7,000 ft.

Phenology
In Colorado, this species is known to flower in April and produce fruits in May (Colorado Natural Heritage Program 2023).

Distribution
Regional endemic native to the Colorado Plateau. *Lomatium latilobum* has a distribution centered in the red rock canyon country of the Colorado River in the vicinity of Moab, Utah. Known from Mesa County in Colorado.

Tony Frates

Tony Frates

Tony Frates

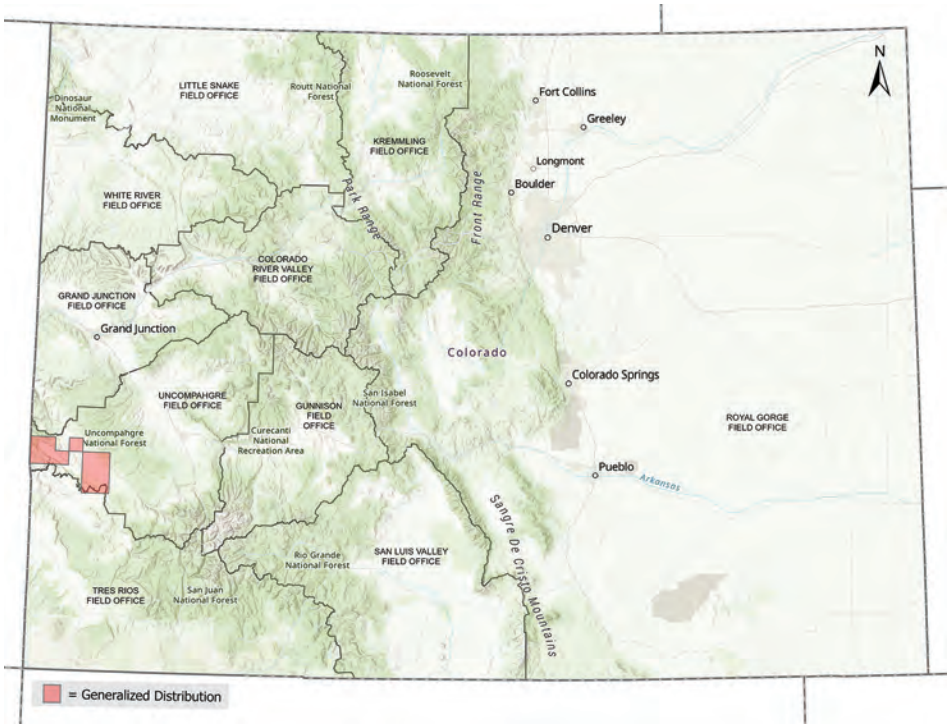
Roland Godon

Tony Frates

Logan Wagner

Lupinus crassus
Paradox lupine

Phil Krening



Lupinus crassus Payson
Fabaceae (pea family)
Conservation ranks: NatureServe G2/S2, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Uncompahgre

Taxonomy
Synonym = *Lupinus ammophilus* var. *crassus*

Description
Plants: tall herbaceous perennials, stems and leaf petioles with appressed hairs; **leaves**: palmately compound, with 5–8 broadly oblong to oblanceolate leaflets; **flowers**: white to light yellow, rarely purple tinged, banner reflexed at or above the midpoint, inflorescence is erect with long-petioled basal leaves when flowering (forming a basal tuft); **fruit**: legumes, pilose (Ackerfield 2022).

Similar species
Lupinus ammophilus differs in that its flowers are blue-violet, and it has spreading rather than appressed hairs on its stems and petioles (Ackerfield 2022).

Habitat
Pinyon-juniper woodland or sagebrush, on Mancos Shale-derived soils in the Naturita area, on quaternary alluvium derived from the Chinle Formation in the Paradox Valley. Found on sparsely vegetated soil, particularly in draws and dry hillsides (Peterson 1983); occasionally found on loamy to clayey soils and adobe hills (O'Kane 1988). Elevation 5,000–6,000 ft.

Phenology
Plants flower in May to early June and fruit in June.

Distribution
Endemic to Colorado. *Lupinus crassus* is narrowly restricted in the Paradox Basin in western Montrose County.

Phil Krening

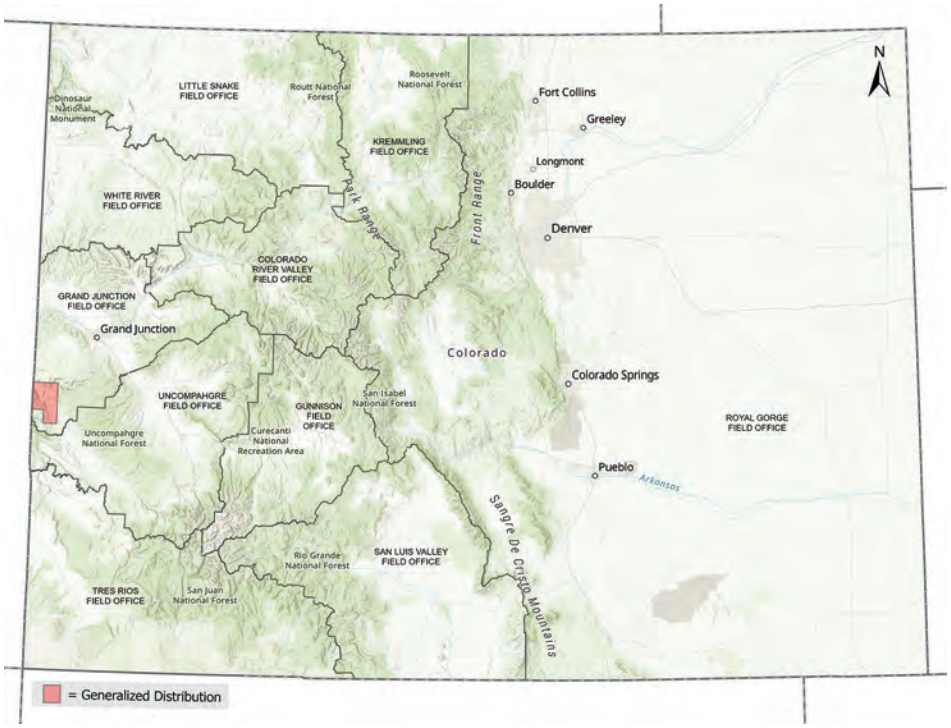
Ernie Marx

Ernie Marx

Peggy Lyon

Lygodesmia grandiflora var. *doloresensis*
Dolores River skeletonplant

Loraine Yeatts



Lygodesmia grandiflora var. *doloresensis* (Tomb) S.L. Welsh
Asteraceae (sunflower family)
Conservation ranks: NatureServe G5?T1T2/S1S2, BLM Sensitive, SWAP Tier 1
Occurrence by field office: Grand Junction

Taxonomy

Synonym = *Lygodesmia doloresensis*. Preliminary genetic analysis suggests that *L. grandiflora* var. *doloresensis* should be treated as a full species (McGlaughlin et al. 2024). Plants from eastern Utah are now identified as *Lygodesmia grandiflora* var. *dianthopsis* (SEINet 2023; Welsh et al. 2015).

Description

Plants: rushlike perennials with milky sap, appearing to be nearly all stem; **leaves**: linear, upper leaves reduced to scales; **flowers**: white, pink, or lavender in color, each head with five ligulate ray flowers, involucre bract tips have keel-shaped appendage; **fruit**: a cypsela (Ackerfield 2022).

Similar species

Dolores River skeletonplant is visually similar in appearance to, and frequently co-occurs with, other species of *Lygodesmia* and *Stephanomeria*. The closely related *L. grandiflora* var. *grandiflora* frequently has 5–9 ray flowers. *L. grandiflora* var. *dianthopsis* is distinguished by being less branched and by having broader leaves (Flora of North America 1993+). Can be distinguished from *Stephanomeria* by the pappus which are plumose bristles in *Stephanomeria* and capillary bristles in *Lygodesmia*.

Habitat

Reddish purple, sandy alluvium and colluvium of the Cutler Formation in canyon bottoms among juniper, shadscale, and sagebrush communities. Many of the known occurrences are along roads, and there are fewer plants away from disturbed roadsides. Elevation 4,300–4,900 ft.

Phenology

Plants begin flowering in late May and early June (Colorado Natural Heritage Program 2023).

Distribution

Endemic to Colorado. *Lygodesmia grandiflora* var. *doloresensis* is restricted to the canyons of the Dolores River and escarpment edges in the southern portion of the Grand Valley in Mesa County.

Ernie Marx

Matt Langemeier

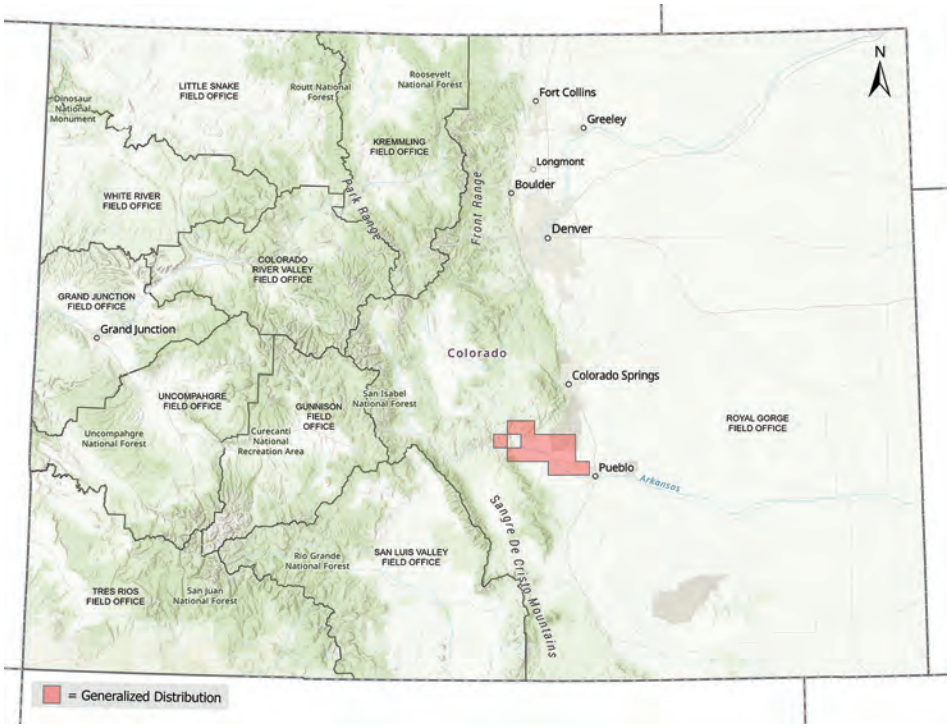
Matt Langemeier

Matt Langemeier

Matt Langemeier

Mentzelia chrysantha
Golden blazingstar

Bob Lagier



Mentzelia chrysantha Engelm. ex Brandeg.
Loasaceae (stickleaf or blazingstar family)
Conservation ranks: NatureServe G2/S2, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Royal Gorge

Taxonomy
Synonym = *Nuttallia chrysantha*

Description
Plants: biennials or short-lived monocarpic perennials, densely hairy, bush-like or candelabra shaped, stems erect, mostly unbranched, 3–6 dm; **leaves**: 3.8–15 cm long, lanceolate, nearly entire to dentate; **flowers**: numerous, petals light to golden yellow 12.5–21 mm; **fruit**: cup-shaped to cylindric capsules, seeds with a narrow wing, the surface with numerous papillae (Ackerfield 2022).

Similar species
Mentzelia reverchonii has broadly winged seeds that have few papillae. In the rosette stage, *M. chrysantha*, *M. reverchonii*, *M. decapetala*, and *M. nuda* cannot be reliably distinguished (Anderson 2006b). *M. nuda* is found co-occurring with golden blazingstar at some locations. *M. nuda* has cream-colored flowers and blooms in June.

Habitat
Found on barren slopes and road cuts of limestone, shale, or alkaline clay. Generally, on moderately disturbed, steep, wasting slopes such as those above the Arkansas River. Coarse-scale vegetation types include pinyon-juniper woodland and juniper woodland communities. While a few occurrences have actually been documented in pinyon-juniper woodland vegetation, the most commonly associated species are *Frankenia jamesii* and *Atriplex canescens* (Anderson 2006b). Elevation 5,100–5,700 ft.

Phenology
Plants flower from July to early September, and they are in fruit from late August into September (Spackman et al. 1997).

Distribution
Endemic to Colorado. *Mentzelia chrysantha* is restricted to the Arkansas River Valley in Fremont and Pueblo counties.

Scott F. Smith

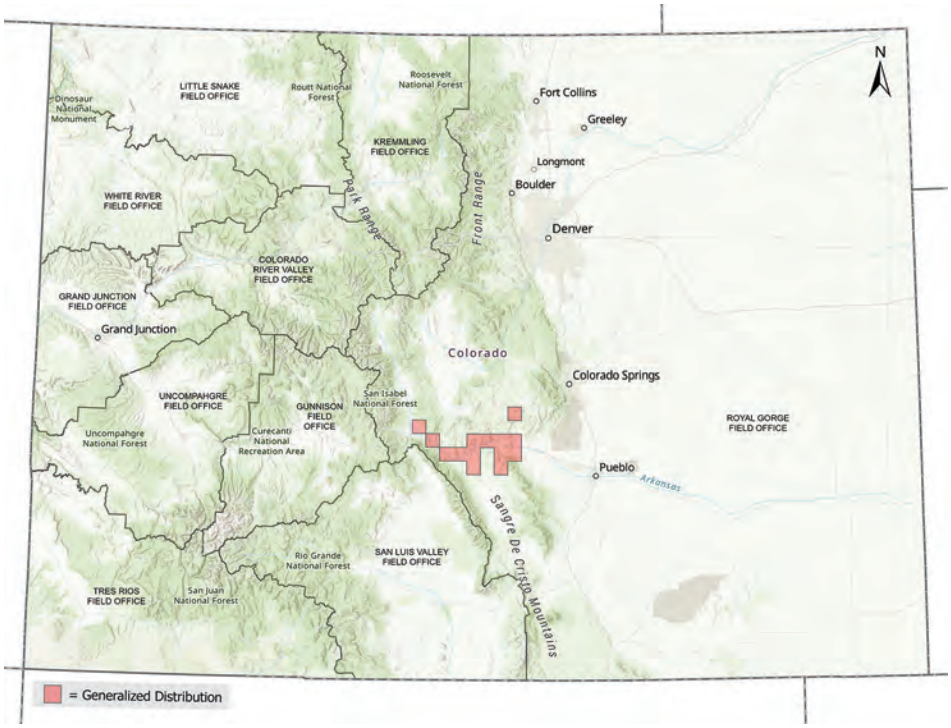
Lucy Haggard

Bob Lagier

Ernie Marx

Mentzelia densa
Royal Gorge blazingstar

Matt Langemeier



Mentzelia densa Greene
Loasaceae (stickleaf or blazingstar family)
Conservation ranks: NatureServe G2G3/S2S3, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Royal Gorge

Taxonomy
Synonym = *Nuttallia densa*

Description
Plants: small perennial subshrub, usually 2–5 dm, the stems branch from the base, giving the plant a hemispherical shape, stems and branches white, with lower part of the stem strongly defoliating; **leaves**: narrowly linear to lanceolate; **flowers**: petals golden yellow, stamens golden yellow, outermost 5 petaloid; **fruit**: a cylindric capsule (Ackerfield 2022).

Similar species
Royal Gorge blazingstar is distinguished from other members of its genus by its hemispherical growth form and the persistence of dried stems from previous years (Spackman et al. 1997).

Habitat
Dry open areas in washes, roadsides, naturally disturbed sites, and steep rocky slopes. Plants grow in gravel, scree, or on cliffs formed from Precambrian granodiorite and gneiss. The species occurs in pinyon-juniper woodland and lower montane shrubland communities with a poorly developed understory and an open canopy. It may dominate in very open, disturbed sites such as sandy washes. Elevation 5,800–7,200 ft.

Phenology
Plants flower from July through early August, and fruits are produced in September (Spackman et al. 1997).

Distribution
Endemic to Colorado. *Mentzelia densa* is restricted to the Arkansas River Valley in Fremont and Chaffee counties.

Matt Langemeier

Matt Langemeier

Matt Reala

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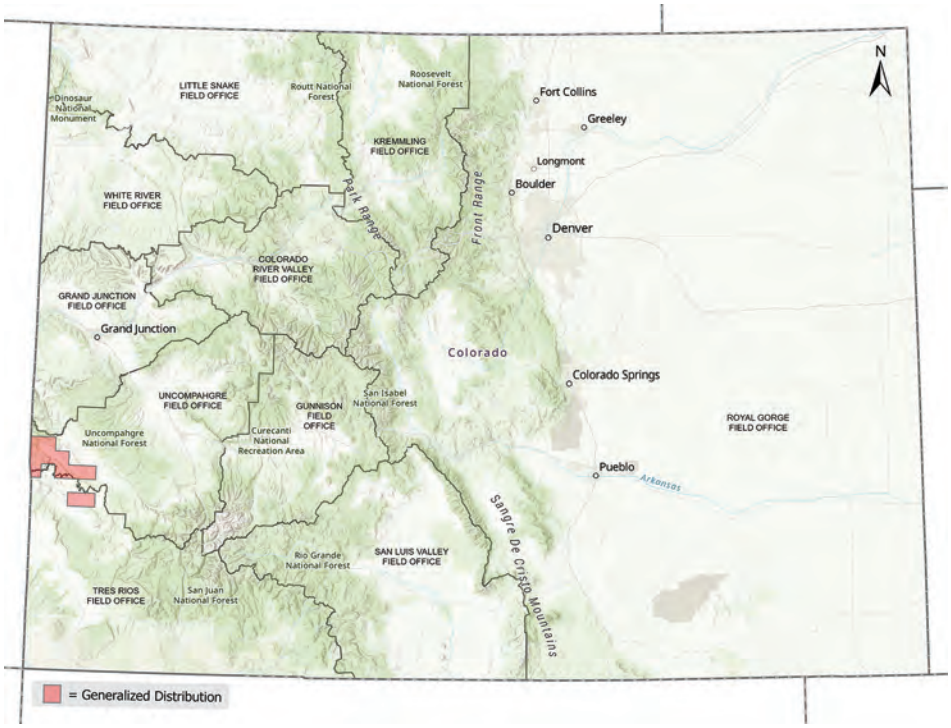
Matt Langemeier

Mentzelia paradoxensis
Paradox Valley blazingstar

Matt Langemeier



Mentzelia paradoxensis J.J. Schnek & L. Hufford
Loasaceae (stickleaf or blazingstar family)
Conservation ranks: NatureServe G2/S2, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Tres Rios and Uncompahgre

Description

Plants: biennials or short-lived perennials, columnar in appearance with lateral branches that are short and not reaching the top of the plant; **leaves**: lanceolate, deeply pinnatifid into narrow lobes; **flowers**: petals yellow, hairy on the outer surface; **fruit**: urn-shaped capsules, seeds with narrow wings (Ackerfield 2022).

Similar species

Paradox Valley blazingstar is distinguished from other members of the genus by its columnar growth form and petals that are hairy on the back, at least below the middle (Ackerfield 2022). *Mentzelia cronquistii* has a bushy growth form and longer capsules (6–16 mm in length). *M. paradoxensis* capsules are 5–9 mm.

Habitat

Found on dry sandy or gypsum slopes (Ackerfield 2022). Found on Mancos Shale, Paradox Formation, sandstone, clay, barren hills, canyon walls, sagebrush flats, and seasonal drainages associated with pinyon-juniper, *Artemisia tridentata*, *Atriplex* spp., *Eriogonum* spp., *Chrysothamnus* spp., *Fraxinus* spp., and *Salix* spp. (Colorado Natural Heritage Program 2023). Elevation 5,200–6,500 ft.

Phenology

Plants flower June through September.

Distribution

Endemic to Colorado. *Mentzelia paradoxensis* is restricted to the Paradox Basin and Gypsum Valley in Montrose and San Miguel counties.

Bob Lagier

Sophie Winitsky

Sequoia Janirella Wrens

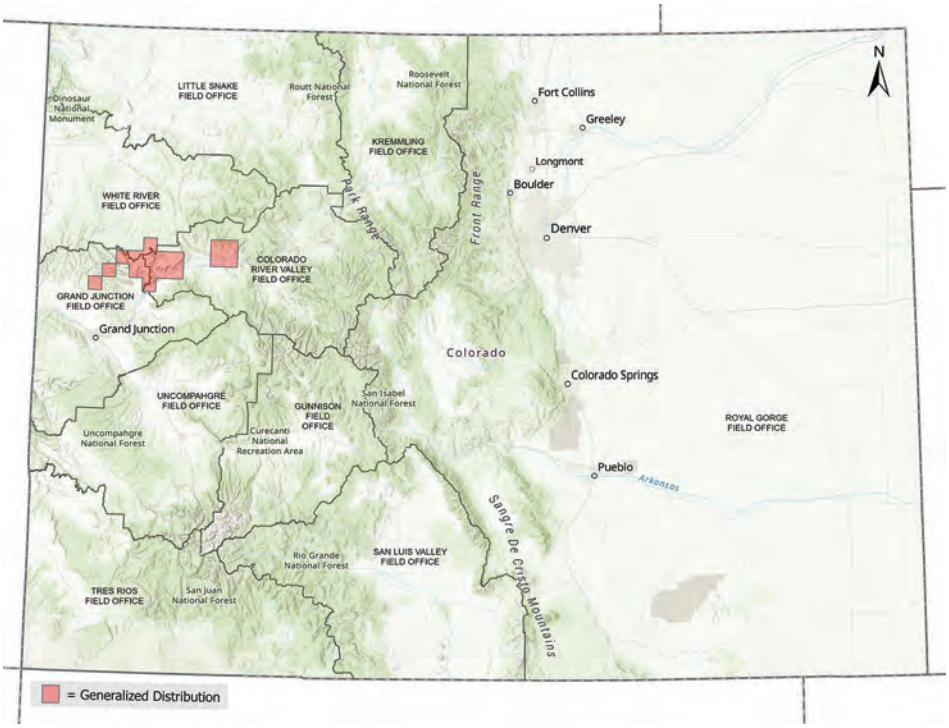
Bob Lagier

Jared Shorma

Jared Shorma

Mentzelia rhizomata
Roan Cliffs blazingstar

Susan Panjabi



Mentzelia rhizomata Reveal

Loasaceae (stickleaf or blazingstar family)

Conservation ranks: NatureServe G2G3/S2S3, BLM Sensitive, SWAP Tier 2

Occurrence by field office: Colorado River Valley and Grand Junction

Taxonomy

Synonym = *Nuttallia rhizomata* (Weber and Wittmann 2012). Reveal (2002) determined that the Colorado plants assigned to *Mentzelia argillosa* are distinct from the plants in Utah and named them *M. rhizomata*. Utah plants are *M. argillosa.*

Description

Plants: perennials from rhizomes, 1–2.5 dm, spreading, freely branched; **leaves**: lanceolate to obovate, entire or shallowly sinuate-dentate; **flowers**: petals golden yellow, stamens golden yellow, the 5 outermost petaloid; **fruit**: urn-shaped capsules, seeds 2–3 mm long, with a narrow wing 0.2–0.3 mm wide, minutely papillate (Ackerfield 2022).

Similar species

Roan Cliffs blazingstar is a long-lived perennial rather than a biennial and is unique among all members of the genus in having a rhizome (Reveal 2002).

Habitat

Steep, shaley talus slopes derived from the Parachute Creek Member of the Green River Formation (Holmgren and Holmgren 2002; Reveal 2002). The plants are commonly associated with Gambel oak, western chokecherry, mountain mahogany, and Utah juniper (Reveal 2002). Elevation 5,500–9,100 ft.

Phenology

Plants flower from June through August and set fruit from mid-August until late September.

Distribution

Endemic to Colorado. *Mentzelia rhizomata* is known only to occur on the Roan Plateau in Garfield County.

Paige Fabre

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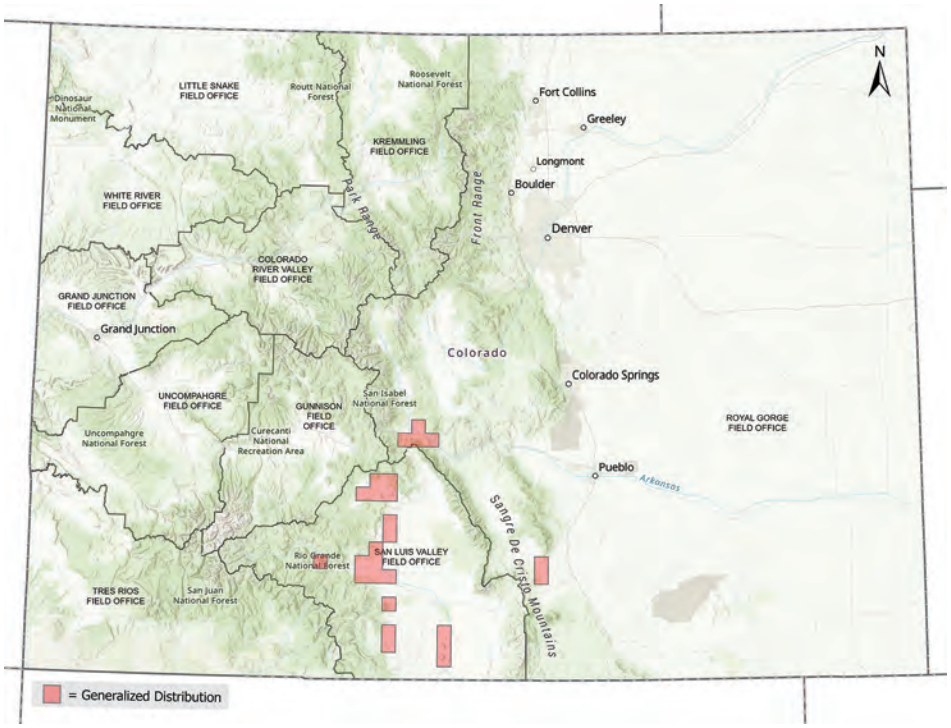
Paige Fabre

Paige Fabre

Neoparrya lithophila
Bill's neoparrya

Cecilia Alexander



Neoparrya lithophila Mathias
Apiaceae (parsley or carrot family)
Conservation ranks: NatureServe G3/S3, BLM and Forest Service Sensitive
Occurrence by field office: Royal Gorge and San Luis Valley

Taxonomy
Synonym = *Aletes lithophilus*

Description
Plants: herbaceous perennials, acaulescent, pseudoscape absent; **leaves**: pinnately compound, glabrous, with linear leaflets 5–20 mm long; **flowers**: yellow in compound umbels, rays reflexed; **fruit**: a schizocarp (Ackerfield 2022).

Similar species
Aletes acaulis has lateral leaf lobes that are broad and incised with flaring tips. Bill's neoparrya has reflexed umbel rays, which give its inflorescence a conspicuous ball-shaped appearance, a characteristic that *A. acaulis* and *A. anisatus* lack. *A. anisatus* also has a strong anise odor (Spackman et al. 1997).

Habitat
Volcanic substrates, in cracks or shelves usually with minimal talus. It is seen in moderate to steep rock outcrops or outcrops of volcanic soils. It also occurs on sedimentary rock derived from extrusive volcanics (Dry Union Formation at Salida). The surrounding habitat is typically grasslands or pinon-juniper woodlands. Although this species is found on all aspects, reports in element occurrence records suggest that it favors north slopes (Anderson 2004). Elevation 7,000–10,000 ft.

Phenology
Plants flower from May through early July and fruit from late June to September (Spackman et al. 1997; Colorado Natural Heritage Program 2023).

Distribution
Regional endemic native to south-central Colorado and adjacent northern New Mexico. In Colorado, *Neoparrya lithophila* is known from Chaffee, Conejos, Fremont, Huerfano, Mineral, Rio Grande, and Saguache counties.

Sequoia Janirella Wrens

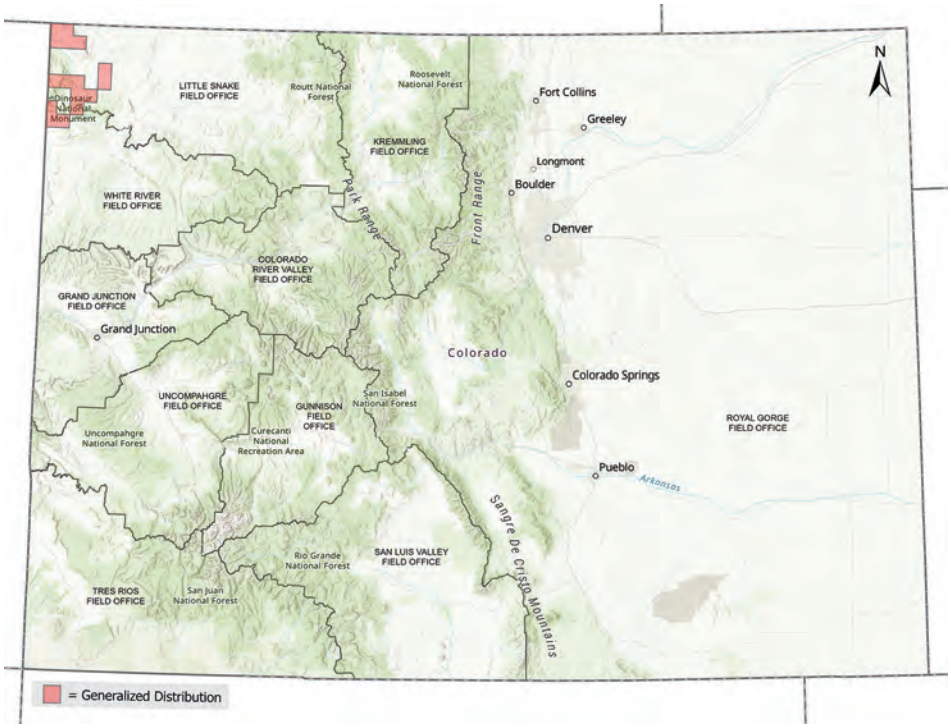
Cecilia Alexander

Cecilia Alexander

Sequoia Janirella Wrens

Oenothera acutissima
Flaming Gorge evening primrose

Peter Gordon



Oenothera acutissima W.L. Wagner
Onagraceae (evening primrose family)
Conservation ranks: NatureServe G2/S2, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Little Snake and White River

Description

Plants: acaulescent perennial forbs with a basal rosette and a long branching, woody taproot; **leaves**: linear, irregularly and coarsely toothed to somewhat pinnatifid; **flowers**: solitary, large, yellow, fading to red-orange, the sepals have a prominent red margin in bud; **fruit**: 4-winged capsule (Ackerfield 2022; Spackman et al. 1997).

Similar species

Oenothera howardii also has a large, solitary yellow flower with leaves that are lanceolate to oblanceolate, entire, or few-toothed and is known to occur in Browns Park in adjacent Daggett County, Utah. *Oenothera flava* has smaller flowers overall and is not known to occur in Moffat County (Ackerfield 2022; Spackman et al. 1997).

Habitat

Restricted to sandy, gravelly, and rocky soils in seasonally wet areas; in meadows, depressions, or along arroyos in mixed conifer forest to sagebrush scrub (Wagner 1981). This species occurs in short outcrops or "rock reefs," drainages, and gullies that may hold water for portions of the year. Elevation 7,200–8,500 ft.

Phenology

Plants flower in late May through June. Flowers open in the evening and close by mid-morning (Spackman et al. 1997)

Distribution

Regional endemic native to northwestern Colorado and adjacent Utah. *Oenothera acutissima* is known only from Moffat County in Colorado.

Phil Krening

Phil Krening

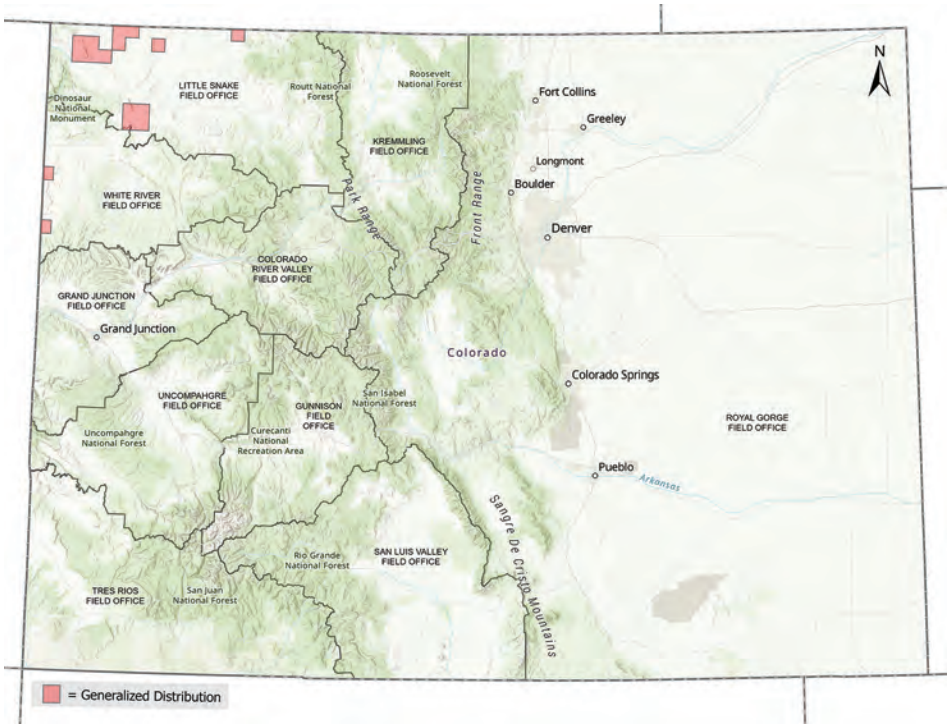
Phil Krening

My-Lan Le

Phil Krening

Oreocarya caespitosa
Tufted cryptantha

Cecilia Alexander



Oreocarya caespitosa A. Nelson
Boraginaceae (borage family)
Conservation ranks: NatureServe G4/S2, BLM Sensitive
Occurrence by field office: Little Snake and White River

Taxonomy
Synonym = *Cryptantha caespitosa*

Description
Plants: perennials, 0.5–1 dm, from a woody taproot, frequently mounded; **leaves**: broadly oblanceolate, 2–5 cm long, softly grey-hairy; **flowers**: white with yellow fornices, 4–6 mm wide; **fruit**: nutlets, usually 2, truncate-ovate, strongly rugose dorsally and ventrally, with a narrowly triangular scar (Ackerfield 2022).

Similar species
Oreocarya humilis has leaves with pustulate bristles, a more erect growth form and does not form as large of mounds, and nutlets that are finely tuberculate with an open scar.

Habitat
Sparsely vegetated gypsum shale knolls and outcrops with pinyon-juniper or sagebrush. Usually with other cushion plants. Elevation 6,000–8,100 ft.

Phenology
Plants flower late April through June. Fruiting occurs May through early June.

Distribution
Wide-ranging endemic with a distribution centered on the Wyoming Basin. Known from Moffat County in Colorado and also known from Idaho, Utah, and Wyoming.

Ernie Marx

Cecilia Alexander

Savanna Smith

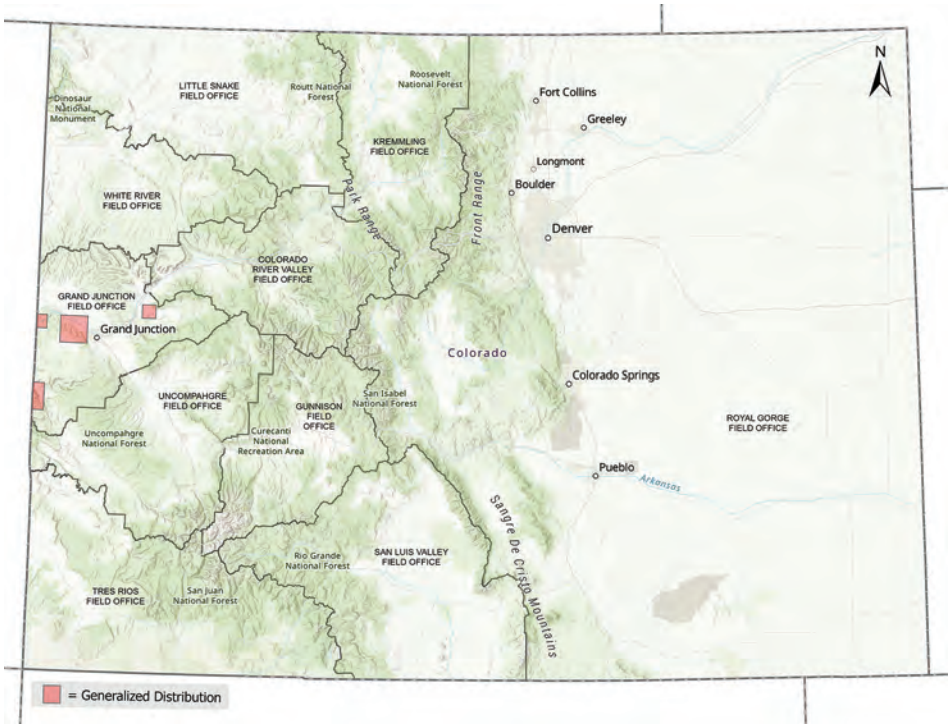
Cecilia Alexander

outstanding photo need

Cecilia Alexander

Oreocarya osterhoutii
Osterhout's cryptantha

Jennifer Ackerfield



Oreocarya osterhoutii Payson
Boraginaceae (borage family)
Conservation ranks: NatureServe G2G3/S2, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Grand Junction

Taxonomy
Synonym = *Cryptantha osterhoutii*

Description
Plants: low perennials, tap rooted about 10 cm tall, often caespitose; **leaves**: basal leaves oblanceolate with conspicuous pustulate hairs (on at least one surface); **flowers**: small, white with yellow fornices and a short corolla tube; **fruit**: nutlets are rugose-tuberculate, scar is open (Ackerfield 2022; Spackman et al. 1997).

Similar species
Osterhout's cryptantha is considered to be distinctive in its habit and appearance among members of the genus and conspicuous due to its small size and flowers (Cronquist et al. 1984; Higgins 1971; Spackman et al. 1997).

Habitat
Dry, barren sites in reddish-purple decomposed sandstone (Spackman et al. 1997), often with juniper, desert shrub, or sagebrush communities (Ackerfield 2022). Elevation 4,500–6,100 ft.

Phenology
Plants flower April through early June (Cronquist et al. 1984; Spackman et al. 1997; Ackerfield 2022). Fruits mature by mid-June (Colorado Natural Heritage Program 2023).

Distribution
Regional endemic native to the Colorado Plateau with a distribution centered in the canyon country of southeastern Utah. Known from Mesa County in Colorado.

Scott F. Smith

Jennifer Ackerfield

Scott F. Smith

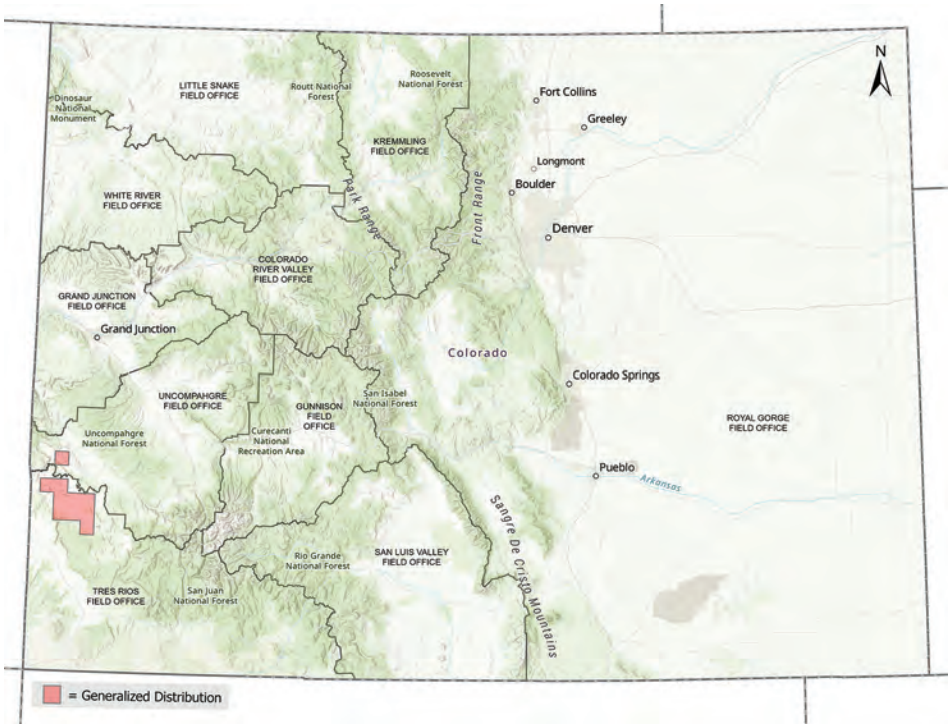
Peggy Lyon

Bob Lagier

Bob Lagier

Oreocarya revealii
Gypsum Valley cryptantha

Phil Krening



Oreocarya revealii W.A. Weber & R.C. Wittmann
Boraginaceae (borage family)
Conservation ranks: NatureServe G2G3/S2S3, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Tres Rios

Taxonomy

Synonym = *Cryptantha gypsophila* (Reveal and Broome 2006). *Oreocarya revealii* is subsumed under *O. paradoxa* in Ackerfield 2022. Morphological and genetic analyses by Bresowar and McGlaughlin (2015) support treatment of *O. revealii* as a distinct species.

Description

Plants: low, densely tufted herbaceous perennials, 0.3–2.5 dm high, with erect and softly hairy stems, a highly branched, woody caudex system arising from a deeply seated taproot; **leaves**: glabrous on top and have appressed pustulate-based bristles below, basal leaves are tufted, narrowly oblanceolate to narrowly spatulate, 1–2.5 (3) cm long, 1.5–3 mm wide, cauline leaves are scattered, oblanceolate to spatulate, 1–4 cm long, 2–4 (5) mm wide; **flowers**: white with yellow fornices, about 10–12 mm long, prominently exserted from the calyx; **fruits**: nutlets are rugose-tuberculate on both surfaces (Reveal and Broome 2006).

Similar species

The leaves of *Oreocarya paradoxa* are sericeous-strigose to villous on both surfaces, whereas the upper surfaces are glabrous in Gypsum Valley cryptantha. Field identification should rely on location (Reveal and Broome 2006; Bresowar and McGlaughlin 2015).

Habitat

Greyish, near-barren gypsum domes of the Paradox Member of the Hermosa Formation (Reveal and Broome 2006). Frequently a dominant vegetation component where it occurs along with a conspicuous and pervasive lichen soil crust. Also found on Mancos Shale in Disappointment Valley. Elevation 5,000–6,500 ft.

Phenology

Plants flower in May and produce fruit in June (Colorado Natural Heritage Program 2023).

Distribution

Endemic to Colorado. Known from the southern Paradox Basin in San Miguel and adjoining Montrose and Dolores counties. Plants from the southern Paradox Basin (Dry Creek Basin, Big Gypsum Valley, Little Gypsum Valley, and Disappointment Valley) should be treated as *O. revealii*, whereas those from Paradox Valley and Sinbad Valley are more genetically aligned with *O. paradoxa* (Bresowar and McGlaughlin 2015).

Phil Krening

Phil Krening

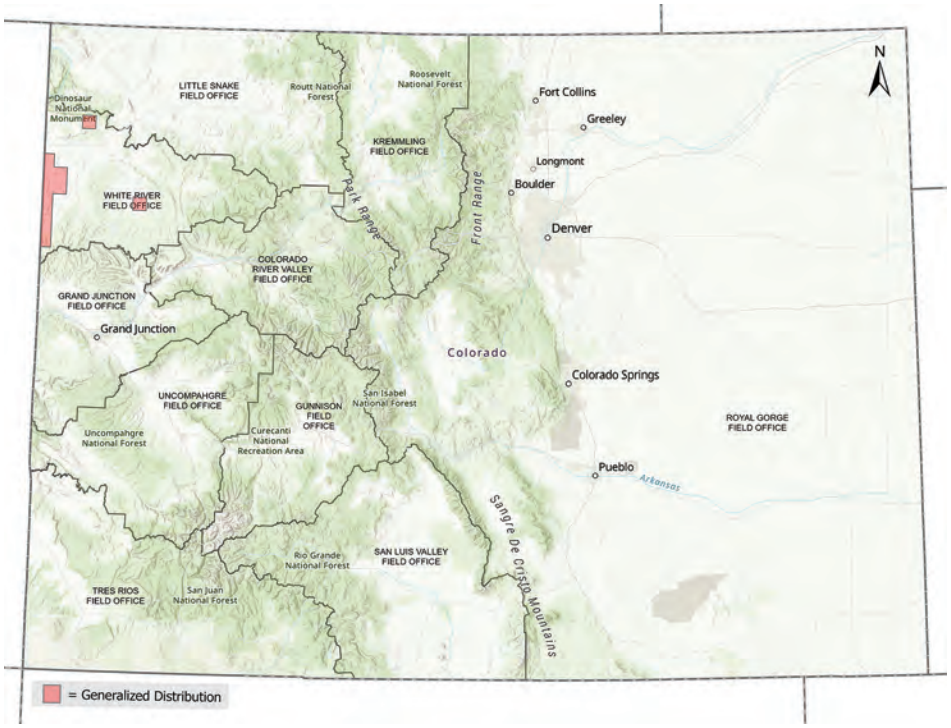
Phil Krening

Phil Krening

Phil Krening

Oreocarya rollinsii
Rollins' cryptantha

Phil Krening



Oreocarya rollinsii (I.M. Johnst.) W.A. Weber
Boraginaceae (borage family)
Conservation ranks: NatureServe G3/S2, BLM Sensitive
Occurrence by field office: White River

Taxonomy
Synonym = *Cryptantha rollinsii*

Description
Plants: biennials or short-lived perennials, 1–3.5 dm; **leaves**: oblanceolate, setose and pustulate; **flowers**: white with yellow fornices, 6–8 mm wide, calyx 6–8 mm long in flower, 7–10 mm in fruit, flaring and never opening out flat at antithesis; **fruit**: nutlets usually 4, narrowly triangular-ovate, 2–4 mm long, slightly roughened, or smooth ventrally, with a sharp edge, the scar closed or nearly so (Ackerfield 2022).

Similar species
Oreocarya flavoculata lacks pustulate bristles and has nutlets that are strongly wrinkled on both sides. *O. flava* has a yellow corolla. *O. stricta* and *O. sericea* have corolla tubes less than 6 mm. Rollins' cryptantha is distinguished by its campanulate corolla, nearly smooth nutlets, noncaespitose habit (Higgins 1971).

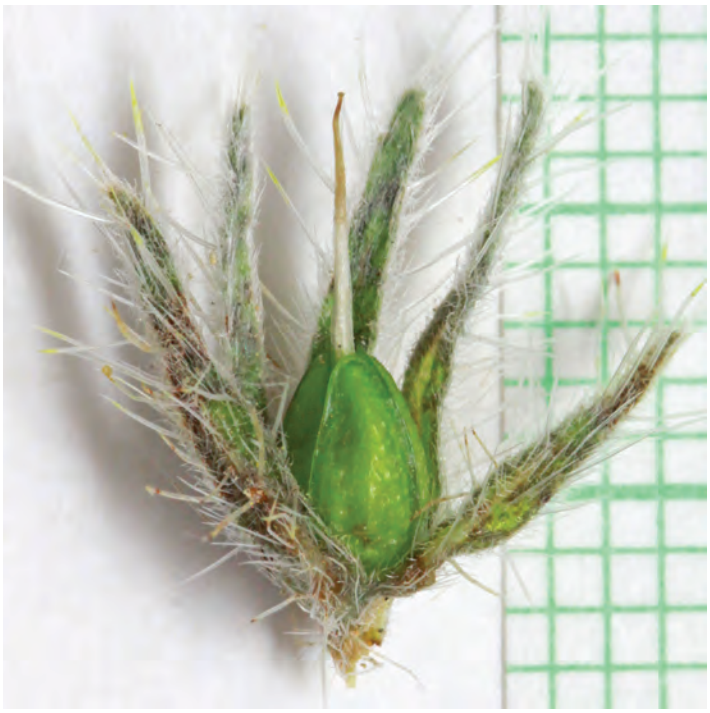
Habitat
White shale slopes of the Green River Formation, in pinyon-juniper woodland, sagebrush, and desert shrubland communities (Spackman et al. 1997). Outside of Colorado, can be found on other shaley substrates, including Mancos Shale and Moenkopi, Summerville, and Uinta Formations (Welsh et al. 2015). Elevation 5,300–6,000 ft.

Phenology
Plant flowers late May through June (Cronquist et al. 1984; Ackerfield 2022).

Distribution
Regional endemic with a distribution centered in Utah's Uinta Basin. Barely entering Colorado in western Rio Blanco County. Also known from Wyoming.

Andrey Zharkikh

Phil Krening

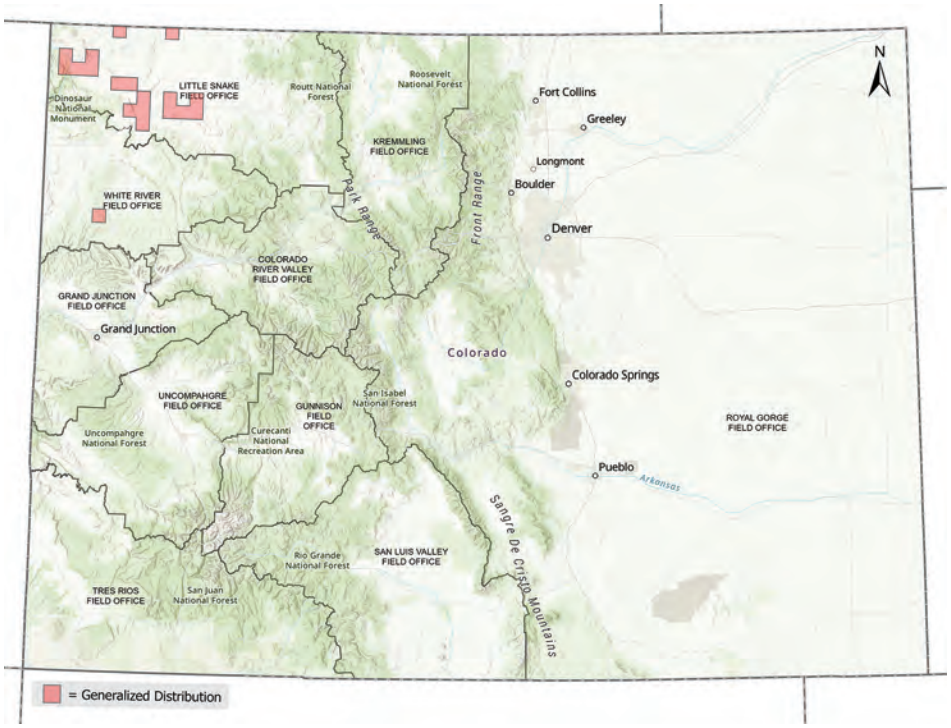


Andrey Zharkikh

Andrey Zharkikh

Oxytropis besseyi var. *obnapiformis*
Bessey's locoweed

Scott F. Smith



Oxytropis besseyi var. *obnapiformis* (Rydb.) Blank (C.L. Porter) S.L. Welsh
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G5T2T3/S2S3, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Little Snake and White River

Description

Plants: acaulescent perennials, erect to spreading, with a stout taproot, densely hairy; **leaves**: leaves are all basal, 4–20 (25) mm long with 17–23 leaflets, elliptic to oblong lanceolate with basifixed hairs; **flowers**: pink to purple and sometimes white, arranged as a scape up to 20 cm tall, each with 6–35 flowers; **fruit**: legumes, ovoid to semiorbicular, inflated, minutely hairy or villous (Ackerfield 2022).

Similar species

Oxytropis can be distinguished from *Astragalus* by its fruits which have a keel with a prominent ascending beak. *Oxytropis lambertii* has dolabriform hairs and fruits that are not inflated and are silky hairy to strigose (Ackerfield 2022).

Habitat

Associated with pinyon-juniper and sagebrush communities, often on barrens in either fine-textured or sandy substrates (Welsh 1993). Found on hilltops, bluffs, and breaks along rivers of foothill gulches, sandy or shaley talus, less often on tuffaceous knolls or sand dunes (Cronquist et al. 1984). Elevation 5,400–7,000 ft.

Phenology

Plants flower May through July (Cronquist et al. 1984; Colorado Natural Heritage Program 2023).

Distribution

Regional endemic found sporadically throughout the Green River Basin and surrounding region in Wyoming, Utah, and Moffat and Rio Blanco counties in Colorado.

Savanna Smith

Savanna Smith

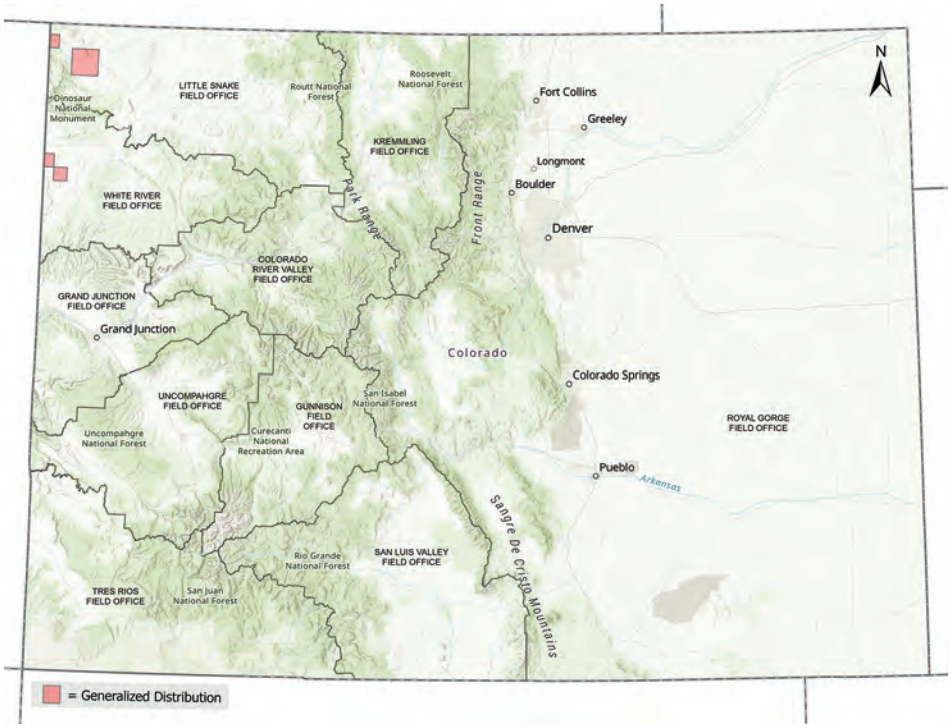
Ernie Marx

Ernie Marx

Ernie Marx

Parthenium ligulatum
Colorado feverfew

Phil Krening



Parthenium ligulatum (M.E. Jones) Barneby
Asteraceae (sunflower family)
Conservation ranks: NatureServe G3/S1, BLM Sensitive
Occurrence by field office: Little Snake and White River

Taxonomy

Synonym = *Bolophyta ligulata* (Jones) W.A. Weber in Weber and Wittmann (2012).

Description

Plants: low, mat-forming "stemless" perennials, 1–2 cm tall; **leaves**: oblanceolate to spatulate, 5–18 (20) mm, margins entire, surfaces strigillose-sericeous, and obscurely gland-dotted; **flowers**: heads sessile, hidden among leaf bases, white, with stubby ray flowers; **fruit**: cypselae (Ackerfield 2022).

Similar species

Chamaechaenactis scaposa occurs in similar habitats but has flowers that are solitary at the end of scapose peduncles and leaves that are evidently petiolate, elliptic, ovate, or rounded.

Habitat

Small areas of gypseous shale or oil shale, white tuffaceous material, selenium-rich soils, shale clayey soils, and white shale (Wiley-Eberle 1980). Barren or semibarren calciferous or gypsiferous outcrops, in salt desert shrub, serviceberry, rabbitbrush, Indian ricegrass, greasewood, galleta, black sagebrush, pygmy sagebrush, and pinyon-juniper communities (Welsh et al. 1993). Elevation 5,400–6,500 ft.

Phenology

Plants flower early to late May and fruit late May to early June.

Distribution

Found sporadically across the desert basins of the Rocky Mountain and Intermountain West. Distribution centered in Utah's Uinta Basin. Known from Moffat and Rio Blanco counties in Colorado.

Phil Krening

Jared Shorma

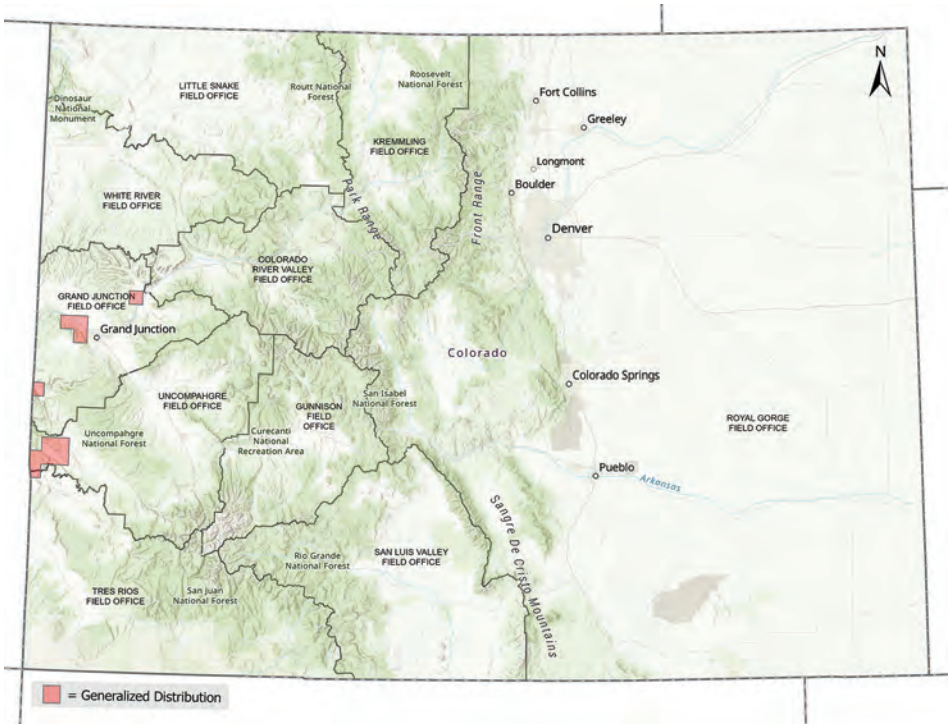
Jared Shorma

Savanna Smith

Scott F. Smith

Pediomelum aromaticum
Aromatic Indian breadroot

Ernie Marx



Pediomelum aromaticum (Payson) W.A. Weber
Fabaceae (pea or legume family)
Conservation ranks: NatureServe G3/S2, BLM Sensitive
Occurrence by field office: Grand Junction, Tres Rios, and Uncompahgre

Taxonomy
Synonym = *Psoralea aromatica*

Description
Plants: perennials, erect, ascending to decumbent, to 1.5 dm; **leaves**: palmately compound, leaflets 5–7, cuneate-obovate of rhombic, 0.5–2 cm long, glabrous above except along the margin; **flowers**: blue-purple or bicolored in a dense spicate raceme (7) 8–12 mm long; **fruits**: legumes, ovoid, the beak 5–6 mm long (Ackerfield 2022).

Similar species
Pediomelum megalanthum has leaves that are villous with appressed hairs, larger flowers that are purple to blue or bicolored purple and white with a dark purple spot at the tip of the keel, and fruits that are apically hairy with a beak 5–8 mm long.

Habitat
Open pinyon-juniper woodland. Occasionally on moderate to steep slopes of soil derived from sandstone or rocky-clay soils. Elevation 5,000–5,600 ft.

Phenology
Plants flower May through June and fruit in June (Cronquist et al. 1984; Colorado Natural Heritage Program 2023).

Distribution
Regional endemic native to the Colorado Plateau in Arizona, Utah, and Colorado. Occurrences are clustered in several narrow geographic regions that are sometimes recognized as representing unique varieties. Known from Mesa, Montrose, and Montezuma counties in Colorado.

Matt Langemeier

Phil Krening

Phil Krening

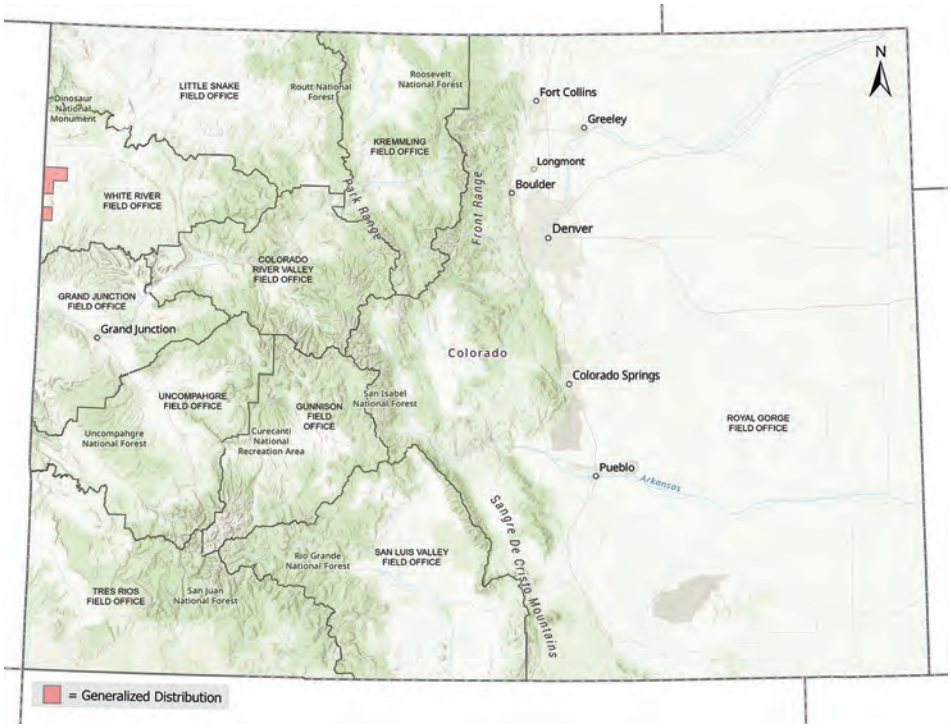
Phil Krening

Ashley Egan

Ashley Egan

Penstemon albifluvis
White River beardtongue

Phil Krening



Penstemon albifluvis England
Plantaginaceae (plantain family)
Conservation ranks: NatureServe G4T1/S1, BLM Sensitive, SWAP Tier 1
Occurrence by field office: White River

Taxonomy

Synonym = *Penstemon scariosus* var. *albifluvis*. Microsatellite studies indicate that *Penstemon albifluvis* should be considered a full species, not a variety of *P. scariosus* (Anderson et al. 2016).

Description

Plants: herbaceous perennials to 5 dm in height with multiple stems from a woody caudex, well-developed basal leaves, glabrous; **leaves**: linear to narrowly oblanceolate, entire, basal tuft of leaves may be lacking when in flower; **flowers**: pale blue to lavender, in a thyrse of 3–6 (8) verticillasters, secund, corolla glandular puberulent externally, palate glabrous, calyx glandular pubescent with margins that are thin membranous, staminode reaching the orifice of the corolla tube but not exserted, bearded at tip; **fruit**: a capsule (Cronquist et al. 1984; Ackerfield 2022).

Similar species

Penstemon luculentus occurs on white shale slopes but is restricted to the Piceance Basin and has leaf blades that are glabrescent except for sometimes at the margins and midveins and lacks glandular hairs on the corolla.

Habitat

Considered an edaphic endemic occurring on fine-textured, light-colored, calcareous soils that are shallow and usually mixed with, or composed primarily of, platy fragments of shale derived from the Parachute Creek Member of the Green River Formation (Spackman et al. 1997). Mixed desert shrub and pinyon-juniper communities on sparsely vegetated white shale slopes. Elevation 5,000–7,200 ft.

Phenology

Plants flower from mid-May through June (Spackman et al. 1997), with seeds produced in late June (Colorado Natural Heritage Program 2023).

Distribution

Endemic to the Uinta Basin with occurrences clustered around the canyons of the White River. Known from western Rio Blanco County where it barely enters Colorado.

Phil Krening

Andrey Zharkikh

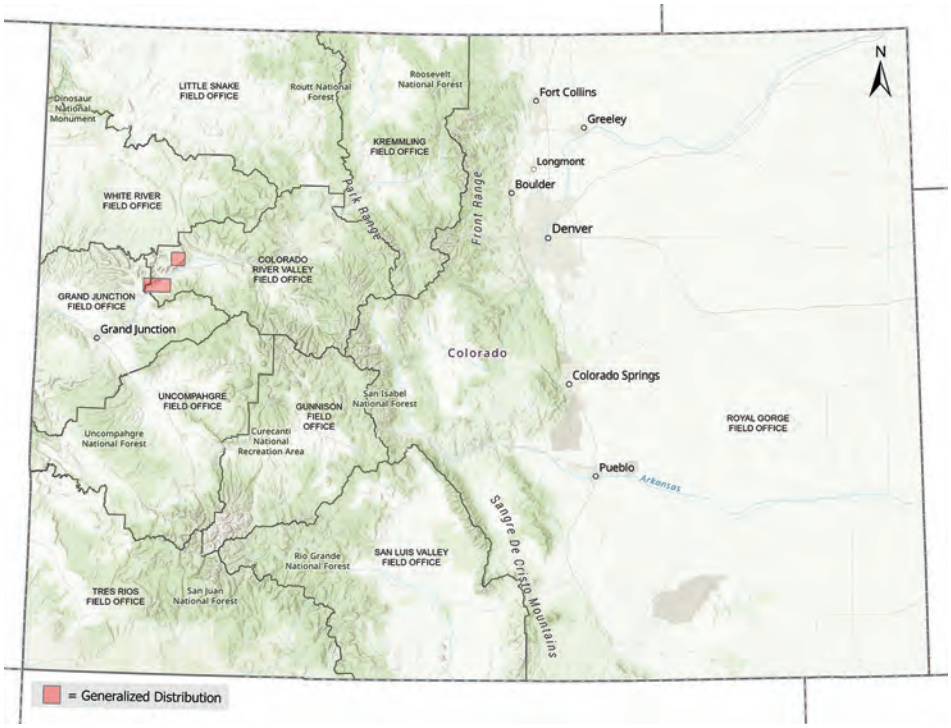
Leo Hardin

Phil Krening

Savanna Smith

Penstemon debilis
Parachute beardtongue

Phil Krening



Penstemon debilis O'Kane & J. Anderson
Plantaginaceae (plantain family)
Conservation ranks: ESA Threatened, NatureServe G1/S1, SWAP Tier 1
Occurrence by field office: Colorado River Valley and Grand Junction

Description

Plants: mat-forming perennials from an underground woody caudex with soboliferous stems, stems glandular-hairy distally, less so below; **leaves**: entirely cauline, obovate, elliptic, or oblanceolate, 1.2–2.5 (3.2) cm x 4–12 mm, glabrous and strongly blue glaucus; **flowers**: lavender to nearly white in a thyrse of 2–4 subsecund verticillasters, glabrous externally and internally, the staminode barely included to scarcely exserted, sparsely golden hairy on upper surface for most of its length with tuft at apex; **fruit**: a capsule (Ackerfield 2022).

Similar species

Parachute beardtongue is easily distinguished from other members of the genus by its weak stems; succulent, glabrous, and glaucous leaves; and white to pale lavender corollas (Spackman et al. 1997).

Habitat

Sparsely vegetated, south-facing, steep, loose piles of white shale derived from the Parachute Creek Member of the Green River Formation. Soils are a mixture of thin shale fragments and clay (Spackman et al. 1997). Elevation 8,000–9,000 ft.

Phenology

Plants flower from mid-June to mid-July and fruit from mid-July to August (Colorado Natural Heritage Program 2023).

Distribution

Endemic to Colorado. *Penstemon debilis* is narrowly restricted to the Mahogany Zone of the Parachute Creek Member of the Green River Formation found on the southern escarpment of the Roan Plateau within the Piceance Basin in Garfield County, Colorado.

Peter Gordon

Phil Krening

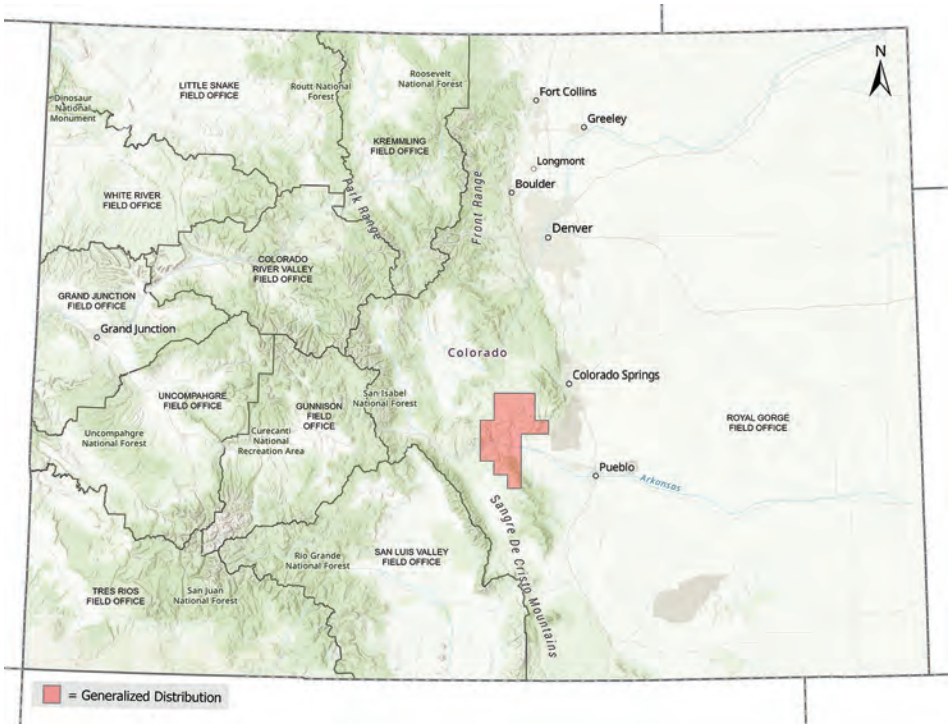
Peter Gordon

Raquel Wertsbaugh

Peter Gordon

Penstemon degeneri
Degener's beardtongue

Phil Krening



Penstemon degeneri Crosswhite
Plantaginaceae (plantain family)
Conservation ranks: NatureServe G2G2/S2S3, BLM and Forest Service Sensitive, SWAP Tier 2
Occurrence by field office: Royal Gorge

Description

Plants: perennial herbs, stems ascending to erect, 25–40 cm, retrorsely hairy proximally, glandular pubescent distally, not glaucus; **leaves**: lanceolate to lanceovate, entire, and up to 6 cm long and 16 mm wide; **flowers**: blue to light violet, funnelform, with reddish-purple nectar guides, glandular pubescent, palate sparsely white to yellow bearded, the staminode included, bearded with sparse golden hairs for about half its length, thyrse 2–10 flowered, sparingly glandular; **fruit**: a capsule (Ackerfield 2022).

Similar species

Penstemon griffinii can be distinguished by having a prominently 2-ridged corolla tube that is violet to blue or purple with violet nectar guides and a densely golden-bearded corolla palate and staminode that is densely golden-bearded for most of its length.

Habitat

Open pinyon-juniper woodlands, ponderosa pine parklands with oak brush and bunchgrass, and montane grasslands, in rocky soils with igneous bedrock. The plants grow mainly near the rim of canyons and also in cracks of large rock slabs, in full sun or shade. Elevation 6,000–9,500 ft.

Phenology

Plants flower June through mid-July, and fruits set late July (Spackman et al. 1997).

Distribution

Endemic to Colorado. *Penstemon degeneri* is known from Fremont County and adjacent portions of Custer, Park, and Teller counties in south-central Colorado.

Phil Krening

Matt Langemeier

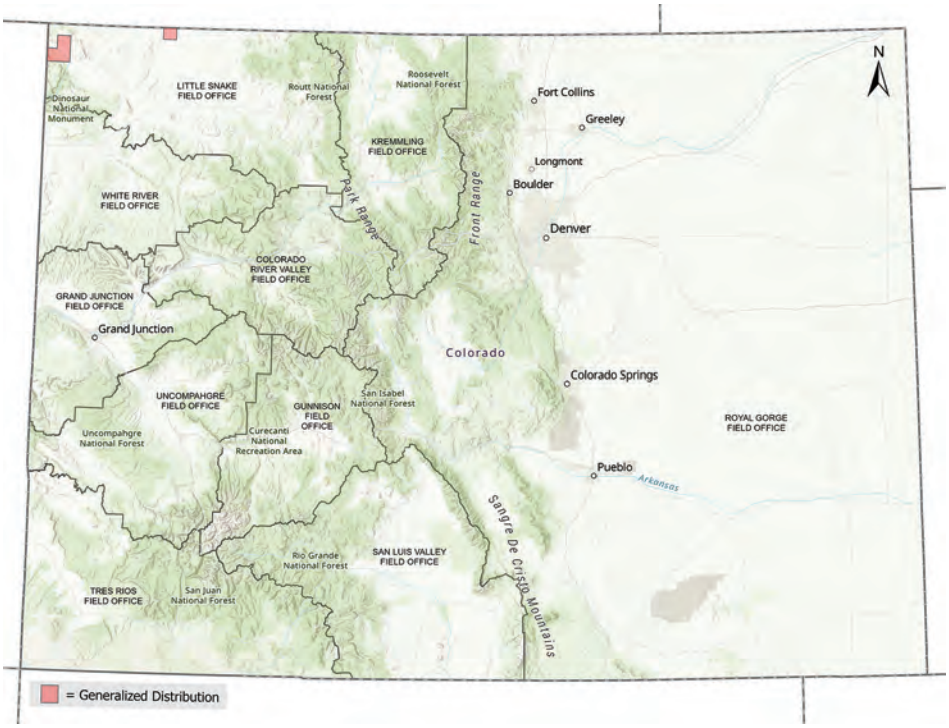
Phil Krening

Phil Krening

Matt Langemeier

Penstemon gibbensii
Gibbens' beardtongue

Phil Krening



Penstemon gibbensii Dorn
Plantaginaceae (plantain family)
Conservation ranks: NatureServe G1G2/S1, BLM Sensitive, SWAP Tier 1
Occurrence by field office: Little Snake

Description

Plants: perennials, 10–20 cm tall, with pubescent stems, occasionally shrubby; **leaves**: narrowly oblanceolate to linear, involute, 5 mm wide, basal leaves may be deciduous in flower; **flowers**: in a glandular hairy thyrse, blue to blue-purple, glandular hairy externally and internally, anther sacs are villous with white hairs, staminode is sparsely white-bearded, usually just at the tip; **fruit**: a capsule (Ackerfield 2022).

Similar species

Penstemon saxosorum has leaves more than 5 mm wide and glabrous stems, corolla, and sepals. *P. fremontii* and *P. glaber* have nonglandular inflorescences and wider leaves (Spackman et al. 1997). *P. penlandii's* corolla is glabrous externally and internally.

Habitat

White, tuffaceous, sparsely vegetated outcrops of the Browns Park Formation and barren, gritty exposures of the Wasatch Formation. Plants frequently occur on steep slopes and along the margin of shallow ephemeral drainage features where erosive forces are high. Associated taxa include *Wyethia scabra* and *Eriogonum brevicaule*. Sometimes found among scattered pinyon-juniper. Elevation 5,500–7,000 ft.

Phenology

Plants flower June to September (Spackman et al. 1997).

Distribution

Regional endemic found in Browns Park in extreme northwestern Moffat County, Colorado, the Washakie Basin in south-central Wyoming, and adjacent areas along the Colorado-Wyoming border.

Phil Krening

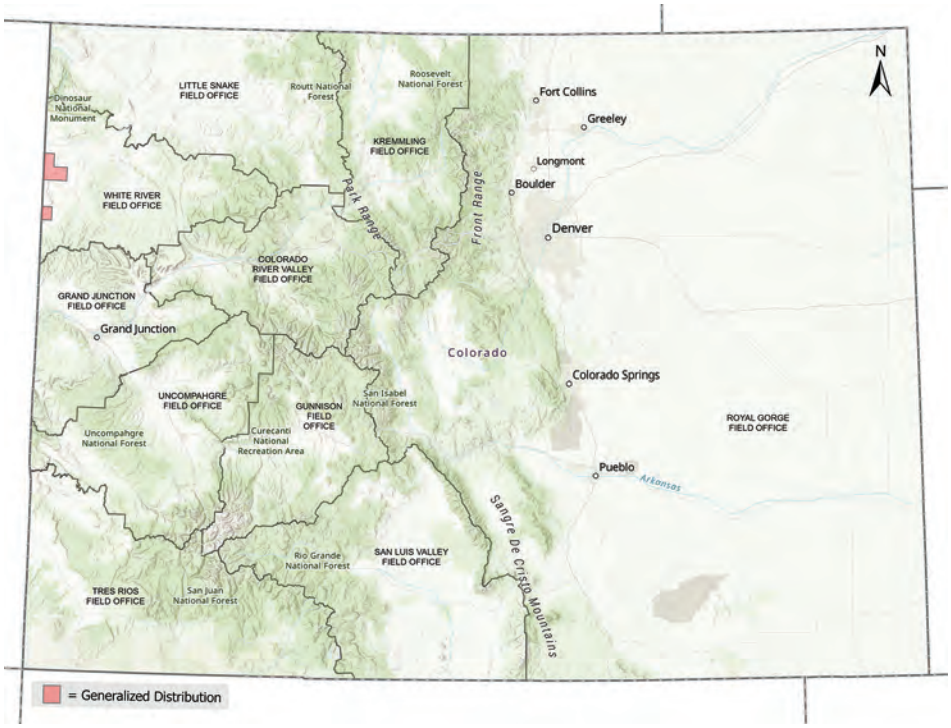
Scott F. Smith

Phil Krening

Phil Krening

Penstemon grahamii
Graham's beardtongue

Phil Krening



Penstemon grahamii D.D. Keck
Plantaginaceae (plantain family)
Conservation ranks: NatureServe G2G3/S1, BLM Sensitive, SWAP Tier 2
Occurrence by field office: White River

Description

Plants: perennial herbs to 2 dm from a taproot; **leaves**: basal leaves broadly oval, petiolate, strongly reticulate-veined, cauline leaves oblanceolate to elliptic, glabrous; **flowers**: pale to deep lavender with dark violet nectar guides, glandular hairy externally, arranged in a thyrse of 2–6 flowered cymes, glandular pubescent, staminode exserted, golden yellow bearded; **fruit**: a capsule (Ackerfield 2022).

Similar species

Graham's beardtongue is conspicuous among members of the genus. Not likely to be confused in appropriate habitat.

Habitat

Considered to be an edaphic endemic found on platy shale slopes and knolls of light-colored Green River Formation shales in sparsely vegetated desert shrub and pinyon-juniper communities (Spackman et al. 1997). Frequently associated with a suite of other oil shale specialists, including *Astragalus lutosus* and *Eriogonum ephedroides*. Elevation 5,800–6,000 ft.

Phenology

Plants flower from late May to early June (Spackman et al. 1997).

Distribution

Endemic to the Uinta Basin. Known from extreme western Rio Blanco County barely entering Colorado.

Penstemon grahamii, **Graham's beardtongue**

Phil Krening

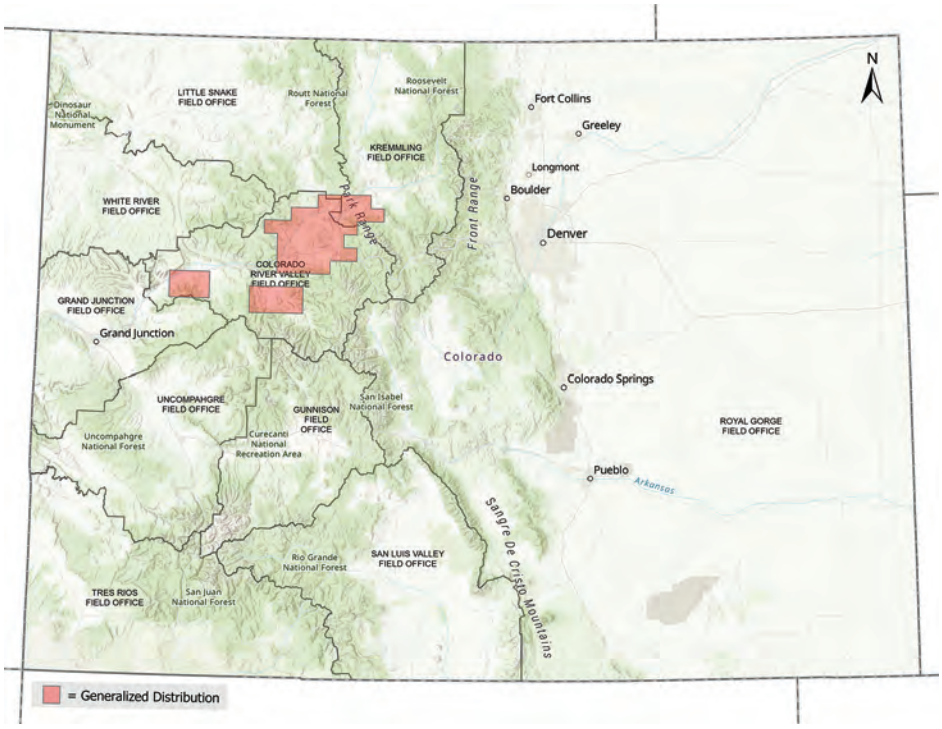
Peter Gordon

Peter Gordon

Phil Krening

Penstemon harringtonii
Harrington's beardtongue

Phil Krening



Penstemon harringtonii Penland
Plantaginaceae (plantain family)
Conservation ranks: NatureServe G3/S3, BLM and Forest Service Sensitive
Occurrence by field office: Colorado River Valley and Kremmling

Description

Plants: erect perennials, 3–7 dm, stems glabrous and glaucus; **leaves**: with entire margins, basal leaves spatulate to oblanceolate, 5–7 cm x 15–25 mm, glaucous, cauline leaves ovate, obovate, or elliptic, 2–5 cm x 10–20 mm, glaucous; **flowers**: pale deep caerulean blue, often purple-tinged, glabrous, arranged in a loosely flowered thyrse with 5–10 verticillasters, staminode glabrous to middle then abruptly densely golden-yellow-bearded, anthers glabrous, 2 of the 4 fertile anthers well-exserted; **fruit**: a capsule (Ackerfield 2022).

Similar species

Harrington's beardtongue is unmistakable when in flower due to 2 exserted stamens. Several other *Penstemons* share the same habitat as *Penstemon harringtonii* and have glaucous leaves: *P. osterhoutii* has anther sacs that are widely divaricate and stamens are not or scarcely exserted. *P. cyathophorus* has 4 stamens exserted.

Habitat

Open sagebrush or less commonly pinyon-juniper habitats, on gentle slopes. Soils are typically rocky loams and rocky clay loams derived from coarse calcareous parent materials (Spackman et al. 1997). Elevation 6,800–9,200 ft.

Phenology

Plants begin flowering in early June of most years and continue until July at higher elevation sites. The development of fruit proceeds through late August; capsules dehise beginning at that time. Much seed seems to have been dispersed by September, but the capsules remain on the plant indefinitely (Buckner and Bunin 1992).

Distribution

Endemic to Colorado. *Penstemon harringtonii* is found throughout the upper Colorado River Basin in Garfield, Grand, Eagle, Pitkin, Routt, and Summit counties.

Peter Gordon

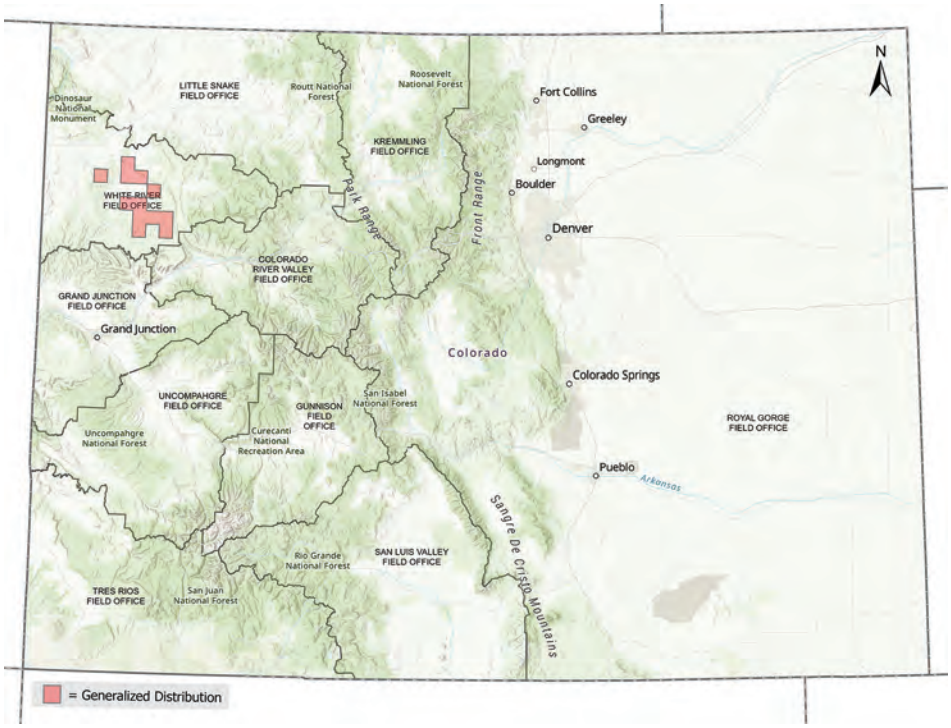
Phil Krening

Peter Gordon

Scott F. Smith

Penstemon luculentus
Bright penstemon

Phil Krening



Penstemon luculentus R.L. Johnson & M.R. Stevens
Plantaginaceae (plantain family)
Conservation ranks: NatureServe G3G4T2/S2, BLM Sensitive, SWAP Tier 2
Occurrence by field office: White River

Taxonomy
Synonym = *Penstemon fremontii* var. *glabrescens* Dorn & Lichvar

Description
Plants: perennial herbs with erect, densely retrorsely cinerous-puberulent stems to 4 dm; **leaves**: linear to lanceolate, glabrous or glabrescent except sometimes with scabrid hairs restricted to the leaf margins, basal leaves may be absent at anthesis; **flowers**: blue to blue-purple corolla, glabrous externally and internally, staminode included, yellow bearded apically; **fruit**: a capsule (Ackerfield 2022; Johnson et al. 2016).

Similar species
Penstemon fremontii has leaves that are densely puberulent or rarely glabrescent and has wider, spatulate or broadly oblanceolate basal leaves that persist at flowering. Members of the *P. scariosus* complex (including *P. albifluvis*) occupy similar habitats but are not known from the Piceance Basin and are generally distinguished by the presence of glandular hairs on the inflorescence, whereas bright penstemon lacks glandular hairs.

Habitat
Barren, arid benches and steep slopes of sandy clay loams of the Uinta Formation and Green River Shale, sometimes intermixed with sandstone fragments from overlying strata. Locally common on road cuts (Johnson et al. 2016). Elevation 5,500–8,500 ft.

Phenology
Plants flower from May through June.

Distribution
Endemic to Colorado. *Penstemon luculentus* is narrowly restricted to Piceance Basin in Rio Blanco County, Colorado.

Savanna Smith

Scott F. Smith

Exposed contact of Green River Shale and Uinta Formation, *Penstemon luculentus* habitat, Phil Krening

Ernie Marx

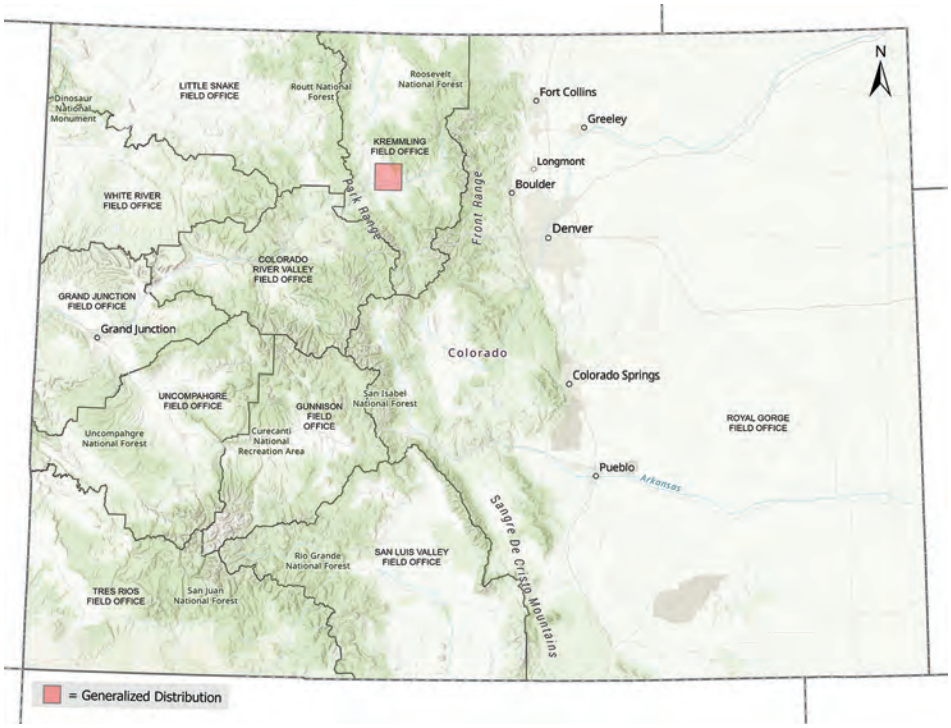
Phil Krening

Lindsey Conrad

Ernie Marx

Penstemon penlandii
Penland beardtongue

Phil Krening



Penstemon penlandii W.A. Weber
Plantaginaceae (plantain family)
Conservation ranks: ESA Endangered, NatureServe G1/S1, SWAP Tier 1
Occurrence by field office: Kremmling

Description

Plants: compact herbaceous perennials to 25 cm tall, stems retrorsely puberulent, weakly rhizomatous; **leaves**: linear, 2–5 mm wide, involute, basal leaves frequently anthocyanic, appearing reddish; **flowers**: blue-violet corolla, glabrous externally and internally about 2 cm long, staminode sparsely bearded on distal side with pale orange hairs, thyrse secund, glabrescent; **fruit**: a capsule (Ackerfield 2022; Spackman et al. 1997).

Similar species

Penland beardtongue is not likely to be confused with other members of the genus in appropriate habitat. *Penstemon strictus* is much larger. *P. gibbensii* has linear leaves but with glandular pubescence on the corolla.

Habitat

Steep barrens of strongly seleniferous clay-shale badlands of the Troublesome Formation. With sparse plant cover, in shrubby sagebrush, *Purshia*, or with serviceberry. Found among a unique plant community that includes other rare species, such as *Astragalus osterhoutii*, *Lomatium nuttallii*, and *Phacelia formosula*. Elevation 7,500–7,700 ft.

Phenology

Plants flower June through July and fruit August through September.

Distribution

Endemic to Colorado. *Penstemon penlandii* is narrowly restricted to a single location within Grand County.

Peter Gordon

Jared Shorma

Jeffrey Flory

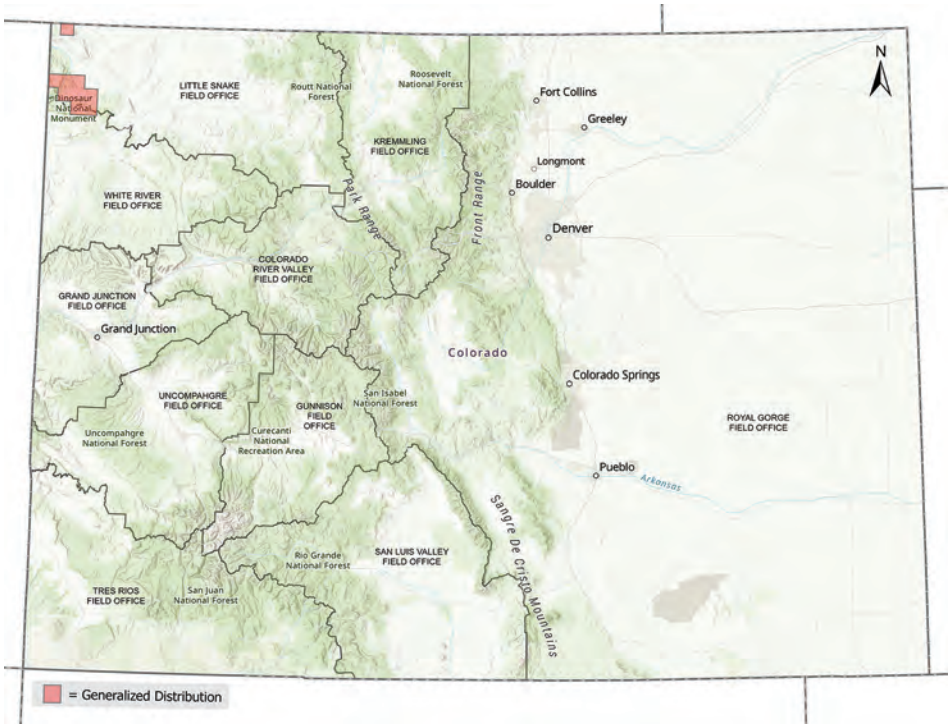
My-Lan Le

Jared Shorma

Phil Krening

Penstemon scariosus var. *cyanomontanus*
Neese's Blue Mountain beardtongue

Phil Krening



Penstemon scariosus var. *cyanomontanus*
Plantaginaceae (plantain family)
Conservation ranks: NatureServe G4T2/S2, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Little Snake

Description

Plants: perennials decumbent to ascending to 1.5–5 dm, stems glabrous; **leaves**: linear to narrowly oblanceolate, glabrous; **flowers**: corolla blue to blueish-purple, glandular externally, palate glabrous, staminode reaching the orifice, bearded at tip, thyrse 3–6 (8) verticillasters, secund, glandular hairy or glabrous, calyx glandular hairy with broad, erose, scarious margins; **fruit**: a capsule (Ackerfield 2022).

Similar species

Neese's Blue Mountain beardtongue resembles other current and former members of the *P. scariosus* complex. The only member of this group that is known to occur in Colorado is *P. albifluvis*, which can be distinguished by its basal leaves, which are typically poorly developed or lacking when in flower, smaller lavender to pale blue corolla, and is restricted to white shale slopes.

Habitat

Occurs on sandy soils or frequently in crevices or on ledges of red quartzite (Uinta Mountain Group) in ponderosa pine woodlands, pinyon-juniper, or sagebrush-grassland communities. Elevation 5,800–8,800 ft.

Phenology

Plants flower mid-May through mid-June.

Distribution

Regional endemic. Known only from the vicinity of Flaming Gorge and Dinosaur National Monument in Moffat County, Colorado, and adjacent Utah.

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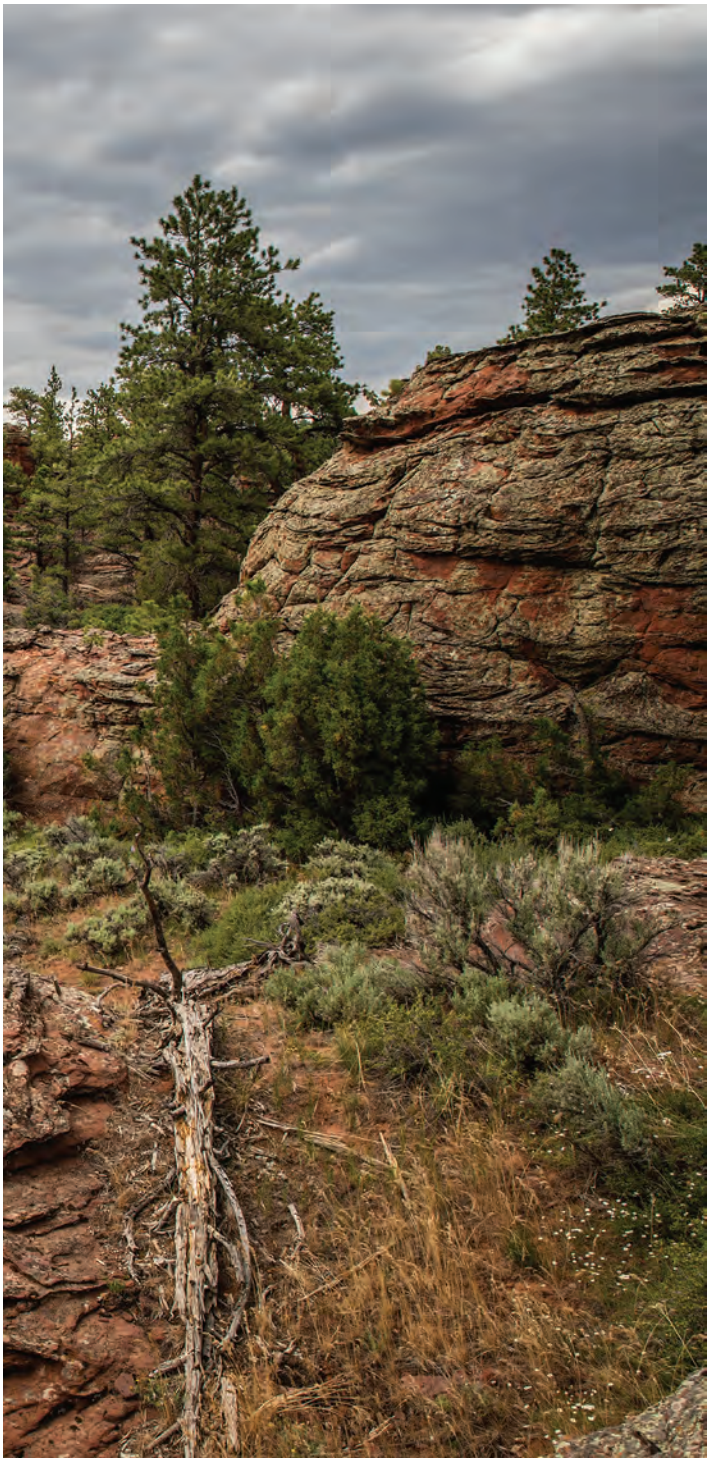

Phil Krening

Phil Krening

Phil Krening

Phil Krening

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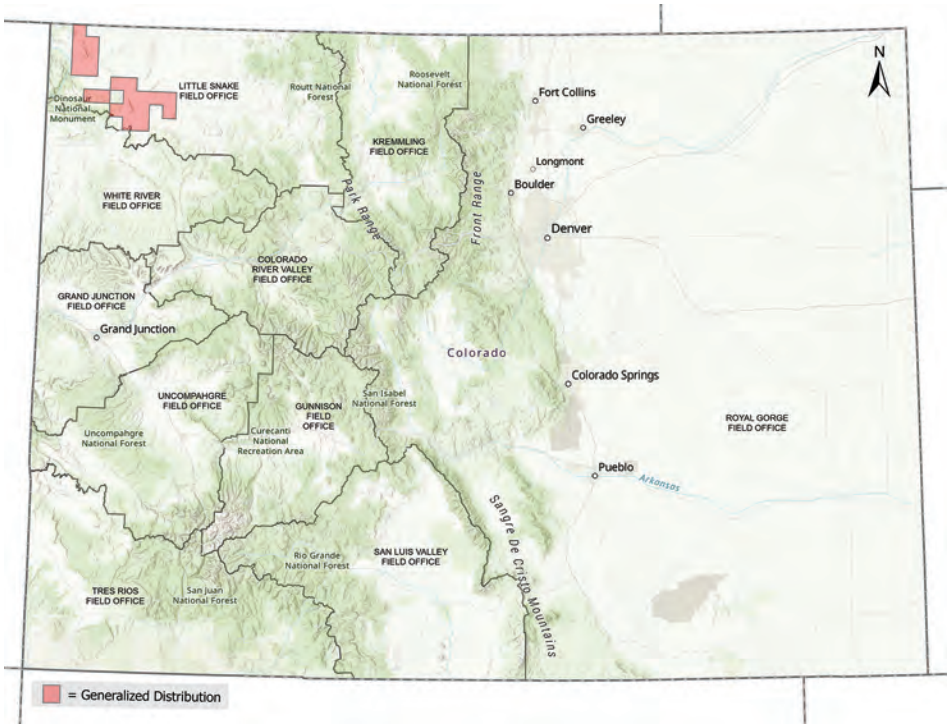
Penstemon yampaënsis
Yampa beardtongue

Scott F. Smith



Penstemon yampaënsis Penland
Plantaginaceae (plantain family)
Conservation ranks: NatureServe G2G3/S2S3, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Little Snake and White River

Description

Plants: acaulescent perennials, to 0.3 cm, stems spreading from branching rootstalks, forming dense caespitose mats; **leaves**: oblanceolate, 1.5–3 cm x 2–4 (5) mm, cinereous; **flowers**: corolla lilac or bluish-tinged, glandular hairy externally, golden-bearded internally on throat, staminode exserted, bearded along the dorsal surface with golden hairs, inflorescence of 2–6 flowers on each of the very short ultimate branches, often exceeded by the foliage, calyx densely viscid-pubescent; **fruit**: a capsule (Ackerfield 2022).

Similar species

Penstemon acaulis is acaulescent forming mats by short stolons, and leaves are slender and linear. *P. caespitosus* forms prostrate mats with long, thin, trailing branches, has leaves that are linear to obovate, to spatulate, puberulent with retrorsely curved hairs, and a thyrse of one-flowered cymes, the flowers have blue to lavender lobes and the throat is white with reddish lines (Cronquist et al. 1984).

Habitat

Dry slopes, limestone outcrops, gypsum hills, or barren shale ridges in sagebrush and pinyon-juniper communities. The plants are found in gently sloping to flat areas with fine sandy soil sometimes reported as calcareous (Painter 1980). Soils are usually sandy, but a few records are from sites with loam, silty clay, and clay loam soils. Geology is variable: Green River, Browns Park, Moenkopi, Weber, and Mancos Shale Formations (Von Bargen et al. 1986). Elevation 5,700–8,300 ft.

Phenology

Plants flower from late May to early July. Fruiting early July to early August (Painter 1980; Colorado Natural Heritage Program 2023).

Distribution

Regional endemic. *Penstemon yampaënsis* has a distribution centered in northwestern Colorado and barely enters Utah in eastern Daggett County. Known from Moffat County in Colorado.

Ernie Marx

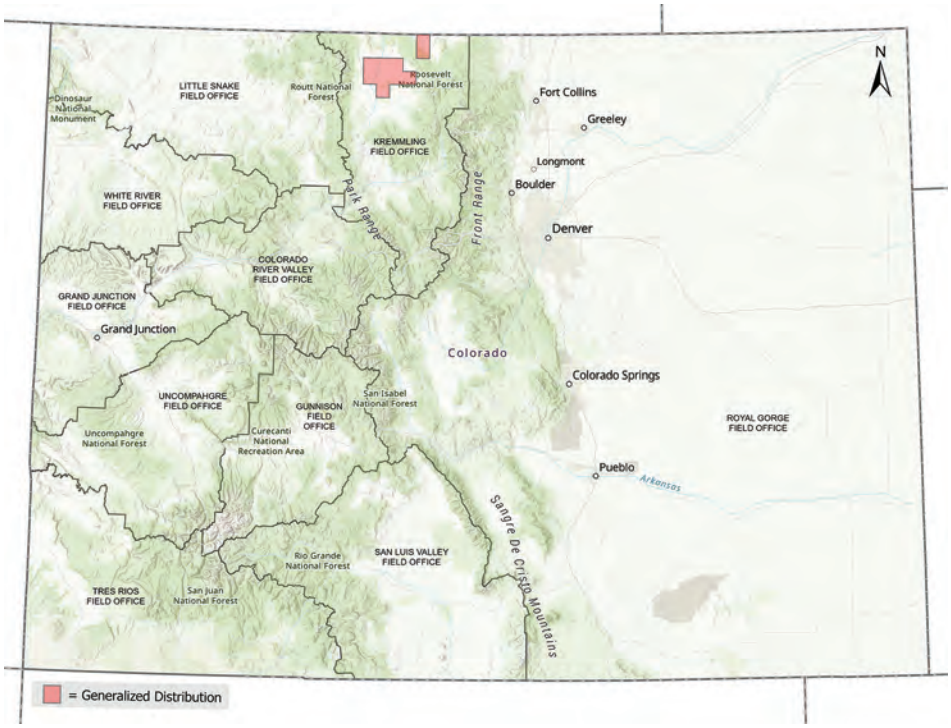
Lee Cassin

Savanna Smith

Savanna Smith

Phacelia formosula
North Park phacelia

Phil Krening



Phacelia formosula Osterh.
Boraginaceae (borage or waterleaf family)
Conservation ranks: ESA Endangered, NatureServe G2/S2, SWAP Tier 1
Occurrence by field office: Kremmling

Taxonomy

The genus *Phacelia* is placed in the Hydrophyllaceae in Ackerfield 2015 and 2022. Recent genetic studies indicate that taxonomic separation of the three *Phacelia* groups in Larimer, Jackson, and Grand counties is not warranted and that *P. gina-glenneae* and *P. scullyi* should be subsumed into *Phacelia formosula* (Naibauer and McGlaughlin 2022).

Description

Plants: herbaceous biennials (rarely annuals) up to 22 cm tall, stems much branched, stout, densely hirsute with glandular hairs, erect to spreading; **leaves**: pinnately divided; **flowers**: violet, stamens and styles exserted, inflorescence is a helicoid cyme; **fruit**: a capsule (Spackman et al. 1997; Ackerfield 2022).

Similar species

North Park phacelia is not likely confused with other members of the genus in appropriate habitat.

Habitat

Sparsely vegetated sandy to shaley exposures. Found on steep-sided ravines and low sandy hills and bluffs composed of the Coalmont, Troublesome, and Niobrara Formations. Elevation 7,900–8,500 ft.

Phenology

Plants can be observed flowering from late June through October in favorable years. In fruit July through November.

Distribution

Endemic to Colorado. *Phacelia formosula* is known to occur in Jackson and Larimer (Grand) counties.

Phil Krening

Peter Gordon

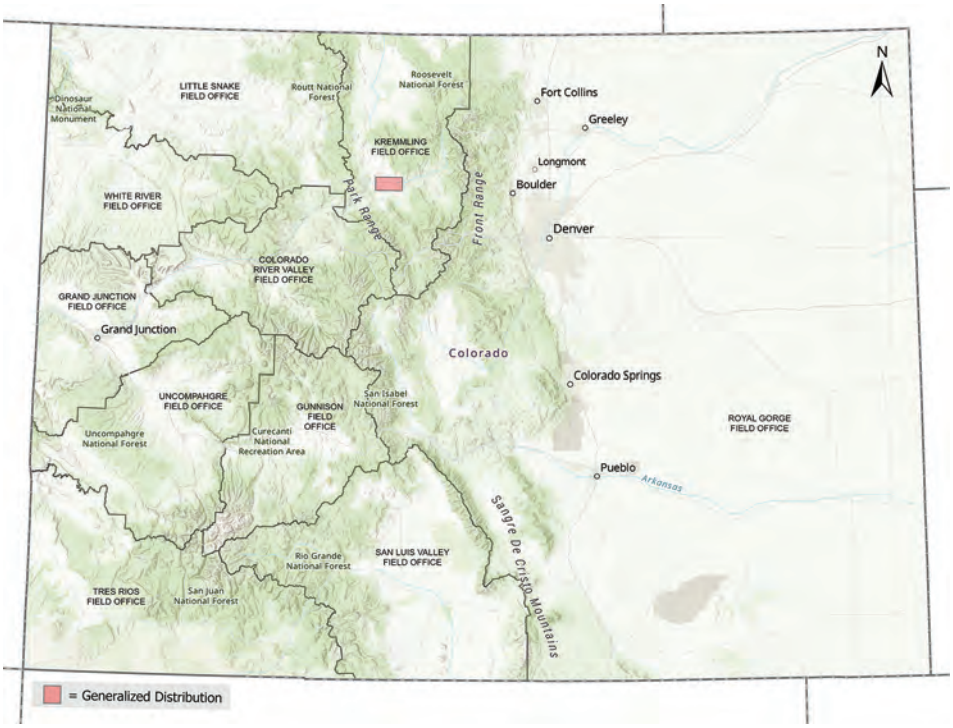
Phil Krening

Lindsey Conrad

Exposed Coalmont Formation, *Phacelia formosula* habitat in North Park, Phil Krening

Phacelia gina-glenneae
Gina's phacelia

Phil Krening



Phacelia gina-glenneae N.D. Atwood & S.L. Welsh
Boraginaceae (borage or waterleaf family)
Conservation ranks: NatureServe G1/S1, BLM Sensitive, SWAP Tier 1
Occurrence by field office: Kremmling

Taxonomy

The genus *Phacelia* is placed in the Hydrophyllaceae in Ackerfield 2015 and 2022. Recent genetic studies indicated that *P. gina-glenneae* should be subsumed into *P. formosula* (Naibauer and McGlaughlin 2022).

Description

Plants: annuals, 0.5–1.2 (1.6) dm, stems usually solitary or with 2–6 lateral branches from the base, glandular; **leaves**: irregularly lobed to pinnatifid; **flowers**: corolla purple, calyx 4.2–5.5 mm long, inflorescence a helicoid cyme; **fruit**: a capsule (Ackerfield 2022).

Similar species

Distinguished from other members of the genus by its habitat specificity and annual habit. Not likely to be confused with other members of the genus in appropriate habitat and range.

Habitat

Found on barren, steep clay or sandy outcrops of the Troublesome Formation. Elevation 7,500–7,700 ft.

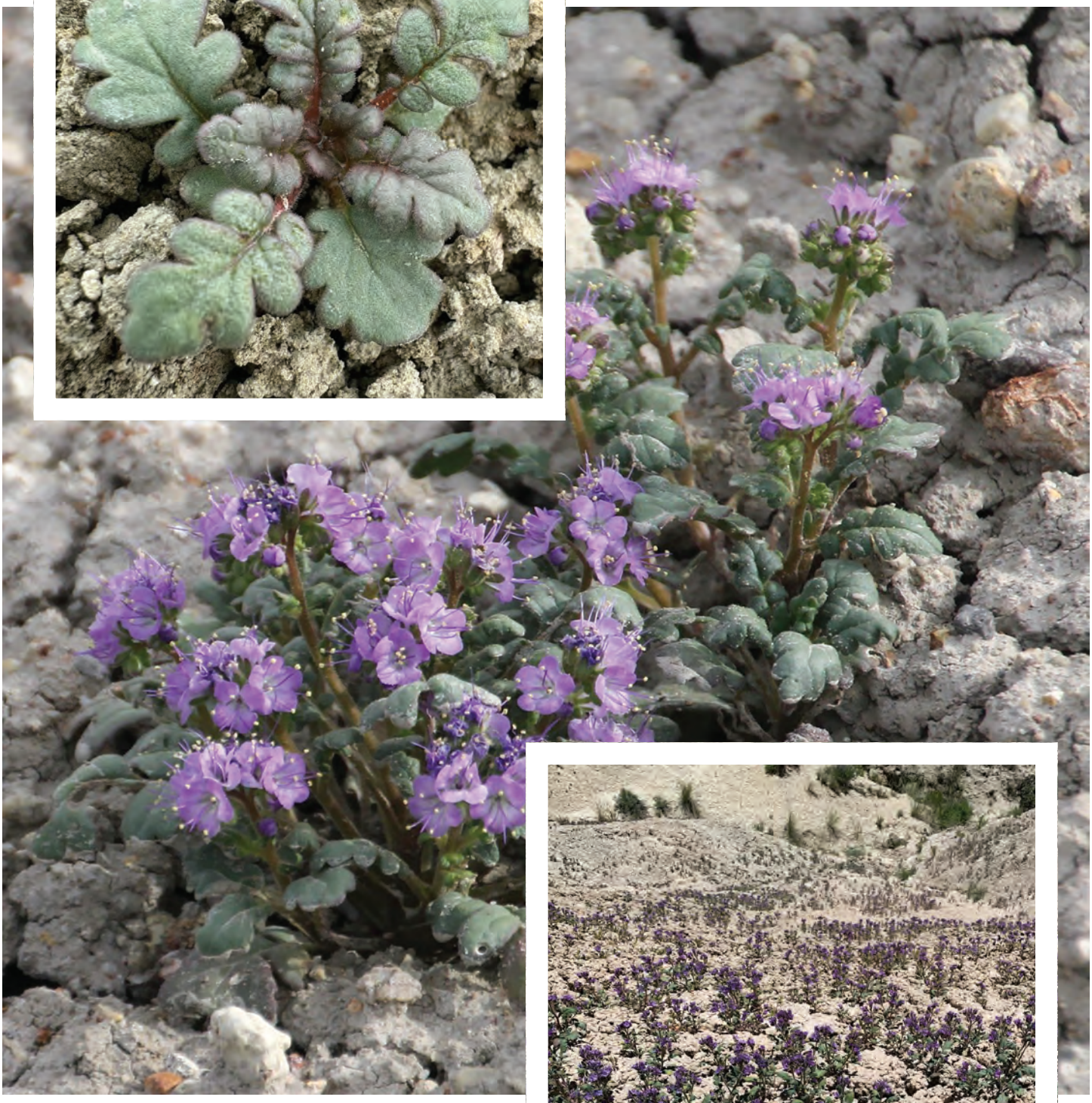
Phenology

Plants flower in August and fruit August to September.

Distribution

Endemic to Colorado. *Phacelia gina-glenneae* is narrowly restricted to a single site in Grand County in north-central Colorado.

Bob Lagier



Scott F. Smith

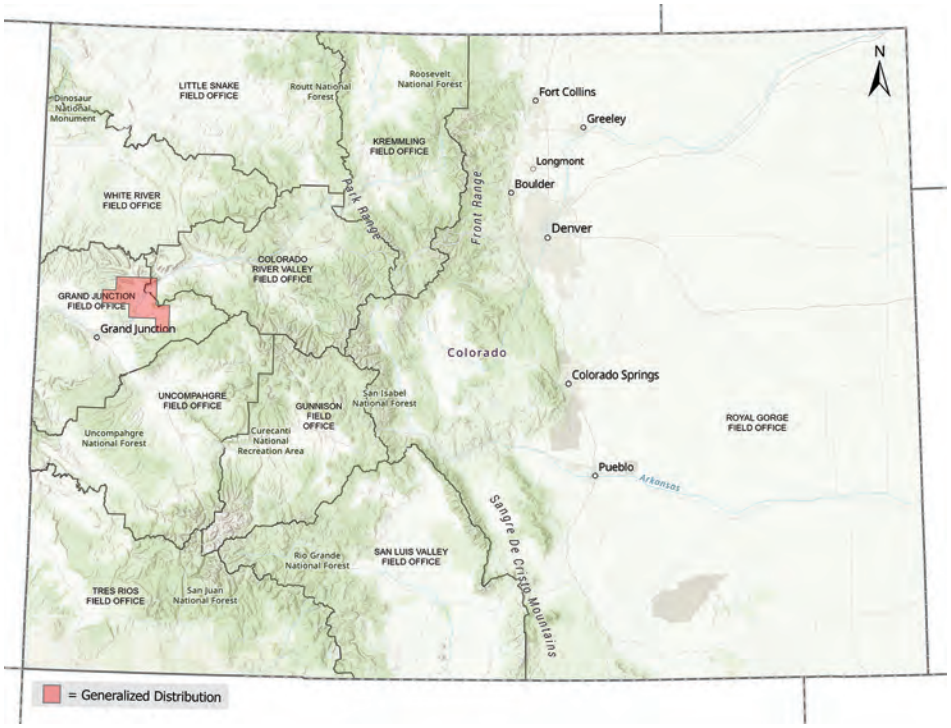
Sequoia Janirella Wrens

Phil Krening

Steep exposure of Troublesome Formation, *Phacelia gina-glenneae habitat*, Grand County, Colorado, Phil Krening

Phacelia submutica
DeBeque phacelia

Phil Krening



Phacelia submutica J.T. Howell
Boraginaceae (borage or waterleaf family)
Conservation ranks: ESA Threatened, NatureServe G2/S2, SWAP Tier 1
Occurrence by field office: Colorado River Valley and Grand Junction

Taxonomy

Synonym: *Phacelia scopulina* (A. Nelson) J.T. Howell var. *submutica* (J.T. Howell). The genus *Phacelia* is placed in the Hydrophyllaceae in Ackerfield 2015 and 2022. Recent genetic data supports *P. submutica* as the correct taxonomic classification for DeBeque phacelia (Anderson and McGlaughlin 2020). Ackerfield (2022) lists this taxon as *P. submutica* and Ackerfield (2015) as *P. scopulina* var. *submutica*.

Description

Plants: small, tap rooted, ephemeral summer annuals, stems are 2–8 cm long, often branched at the base with a deep red color, and generally lay flat on the ground in a disc-shaped clump, plants have straight, short, spreading, stiff hairs; **leaves**: entire, coarsely crenate, pinnately lobed, or pinnatifid; **flowers**: small, corolla tube light yellow with white lobes, stamens included, hairy externally, calyx equal to or longer than corolla; **fruit**: a capsule (Ackerfield 2022).

Similar species

DeBeque phacelia is distinctive among members of the genus in Colorado by its annual habit, habitat specificity, and white corolla with included stamens.

Habitat

Steep slopes and ridgetops on xeric sites in chocolate-brown or gray clay adobe badlands of the Wasatch Formation (Atwell Gulch and Shire Members). Soils have high shrink-swell potential (large cracks in the soil). The species is adapted to grow only in very early pioneer habitats with sparse vegetation cover (Anderson and McGlaughlin 2020; O'Kane 1987a). Elevation 4,700–6,200 ft.

Phenology

Vegetative growth probably begins in early April (O'Kane 1987a). Flowering occurs in late April to late June, and fruiting occurs from mid-May to late June (Colorado Natural Heritage Program 2023).

Distribution

Endemic to Colorado. *Phacelia submutica* is narrowly restricted within the Colorado River Valley in Garfield and Mesa counties.

Scott F. Smith

Matt Langemeier

Phil Krening

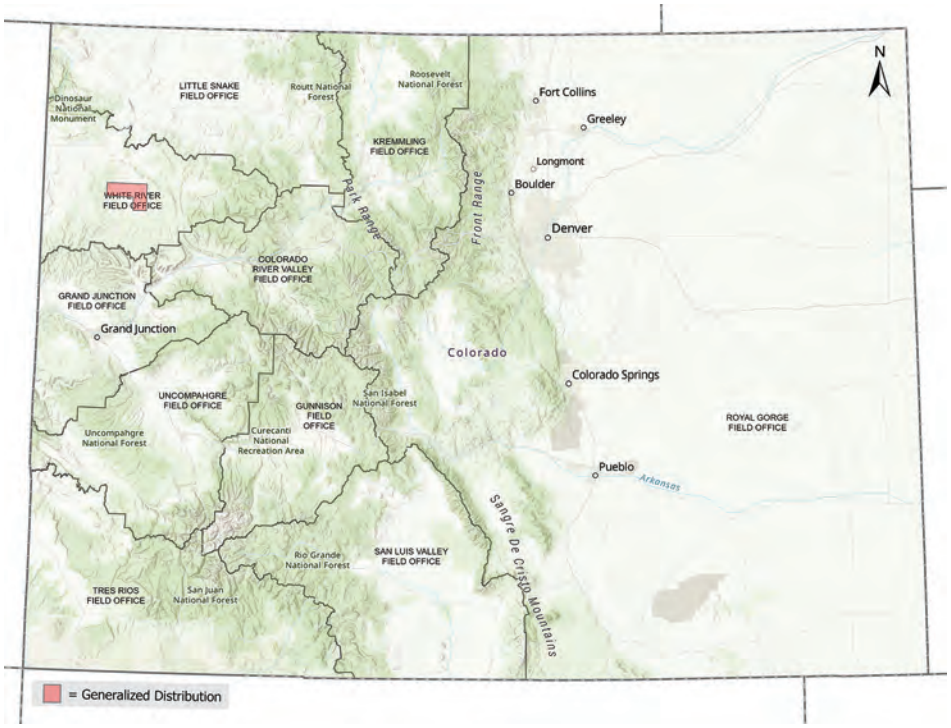
Phil Krening

Stephen Wenger

Scott F. Smith

Physaria congesta
Dudley Bluffs bladderpod

Phil Krening



Physaria congesta (Rollins) O'Kane & Al-Shehbaz
Brassicaceae (mustard family)
Conservation ranks: ESA Threatened, NatureServe G1/S1, SWAP Tier 1
Occurrence by field office: White River

Taxonomy
Synonym = *Lesquerella congesta*

Description
Plants: diminutive, mound-forming perennials to 1.5 cm, covered in stellate hairs, caudex buried, simple or few-branched, thickened with old leaf bases; **leaves**: silvery, linear-oblanceolate, entire; **flowers**: yellow, in short racemes that do not exceed the leaves; **fruit**: siliques, densely hairy (Rollins 1993; Ackerfield 2022).

Similar species
Dudley Bluffs bladderpod is not likely to be confused with other members of the genus. Plants are very small and may be overlooked.

Habitat
Predominantly on flat or low grade, barren, platy, white shale exposures of the Green River Formation. Surrounding community consists largely of pinyon-juniper woodland. Elevation 6,000–6,700 ft.

Phenology
Plants flower early April through May and fruit late May through June.

Distribution
Endemic to Colorado. *Physaria congesta* is narrowly restricted within the Piceance Basin in Rio Blanco County.

Phil Krening

Physaria congesta in fruit, Phil Krening

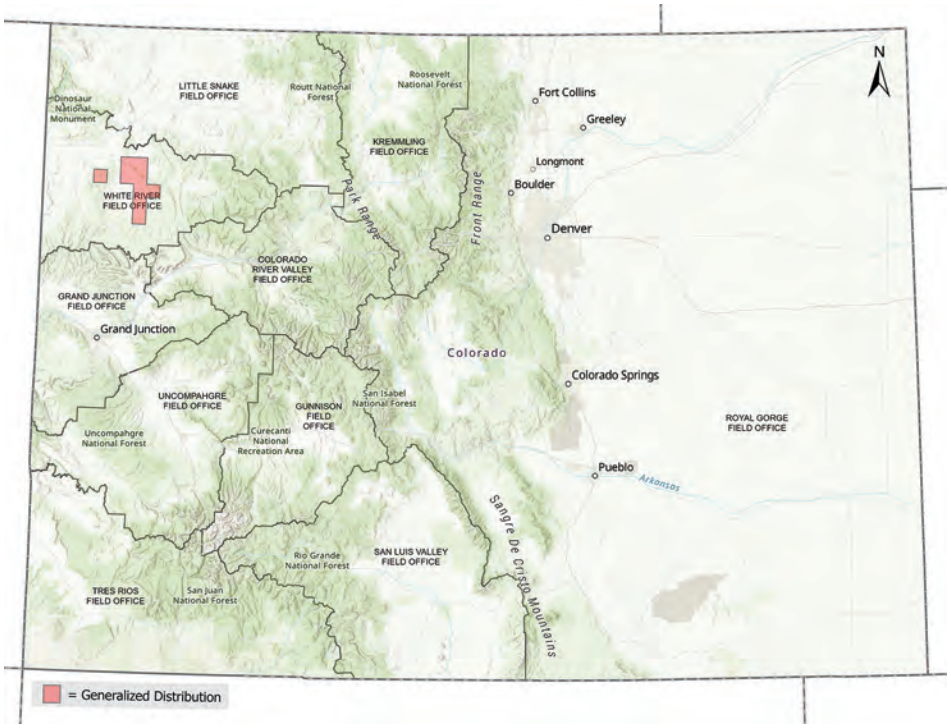
Phil Krening

Phil Krening

Gina Beebe

Physaria obcordata
Dudley Bluffs twinpod

Phil Krening



Physaria obcordata Rollins
Brassicaceae (mustard family)
Conservation ranks: ESA Threatened, NatureServe G1G2/S1S2, SWAP Tier 1
Occurrence by field office: White River

Description

Plants: perennials from deep thickened roots, 10–20 cm, covered with dense small scurfy scales; **leaves**: basal leaves broadly oblanceolate, entire to shallowly sinuate-dentate, silvery covered with small scurfy scales; **flowers**: yellow; **fruit**: obcordate siliques, slightly inflated, fruiting pedicels widely spreading to recurved (Rollins 1993; Ackerfield 2022).

Similar species

Physaria acutifolia and *P. parviflora* have elliptical to subglobose fruits (Rollins 1993).

Habitat

Restricted to barren white exposures of the Parachute Creek Member of the Green River Formation. Frequently on steep, erosive slopes with pinyon-juniper. Elevation 5,900–7,700 ft.

Phenology

Vegetative growth likely begins in early May, and flowering occurs from mid-May through mid-June. Fruit matures through the end of July. Dehiscence is from mid-June through August (O'Kane 1987b).

Distribution

Endemic to Colorado. *Physaria obcordata* is found sporadically throughout the Piceance Basin in Rio Blanco County.

Physaria obcordata habitat, Phil Krening

Obcordate fruit of *Physaria obcordata*, Phil Krening

Phil Krening

Scott F. Smith

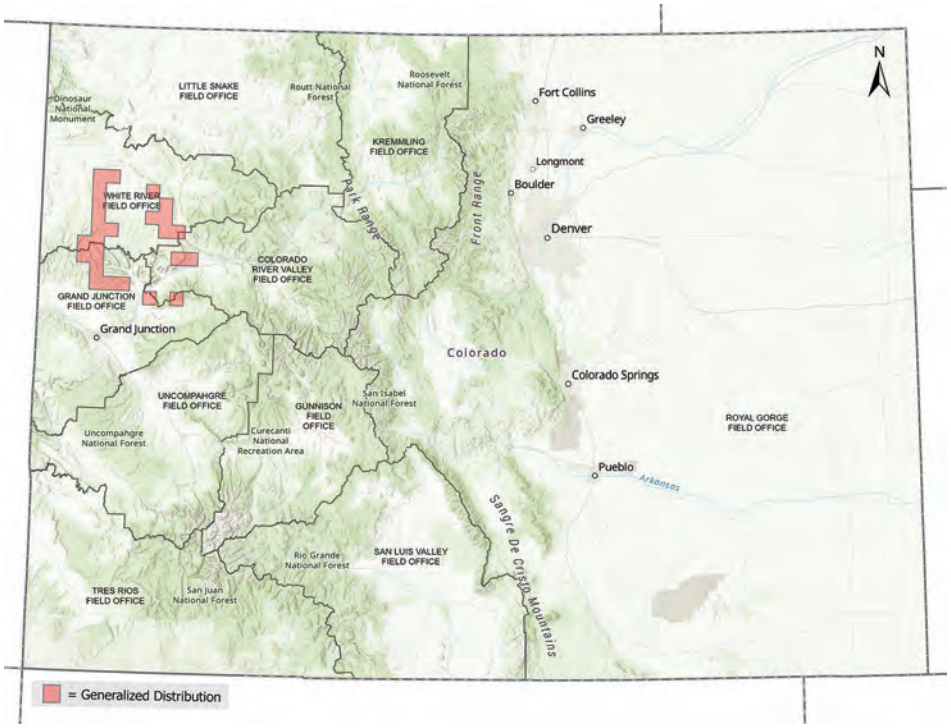
Savanna Smith

Phil Krening

Colorado Natural Areas Program

Physaria parviflora
Piceance bladderpod

Lindsey Conrad



Physaria parviflora (Rollins) O'Kane & Al-Shehbaz
Brassicaceae (mustard family)
Conservation ranks: NatureServe G2G3/S2S3, BLM Sensitive, SWAP Tier 2
Occurrence by field office: White River, Grand Junction, and Colorado River Valley

Taxonomy
Synonym = *Lesquerella parviflora* (Rollins 1983)

Description
Plants: low-growing perennial herbs with prostrate to decumbent stems, densely pubescent throughout with silvery hairs; **leaves**: basal leaves rosette-like, broadly obovate, margins entire with 1–2 teeth, cauline leaves oblanceolate to nearly oblong, entire; **flowers**: yellow, in secund racemes; **fruit**: siliques pendent elliptic to subglobose, fruiting pedicels recurved (Rollins 1993; Ackerfield 2022).

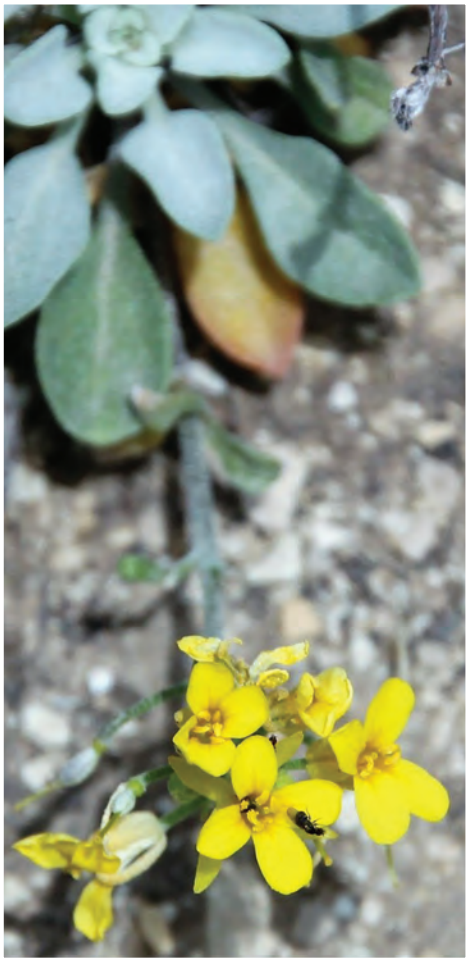
Similar species
Piceance bladderpod is distinguished from other members of the genus by having decumbent to prostrate stems, broadly ovate basal leaves, and small petaled flowers (4–9 mm). This species is not included in the *Physaria* key in Ackerfield 2022.

Habitat
Outcrops of Green River Formation shale in the Piceance Basin. Growing on ledges and slopes of canyons in open areas of pinon-juniper communities. The soils are Torriorthents-Rock outcrop complex (Peterson and Baker 1982). Elevation 6,800–9,000 ft.

Phenology
Plants flower from June through early July and fruit in July (Peterson and Baker 1982).

Distribution
Endemic to Colorado. *Physaria parviflora* is found throughout the greater Roan Plateau in Garfield, Mesa, and Rio Blanco counties.

Scott F. Smith



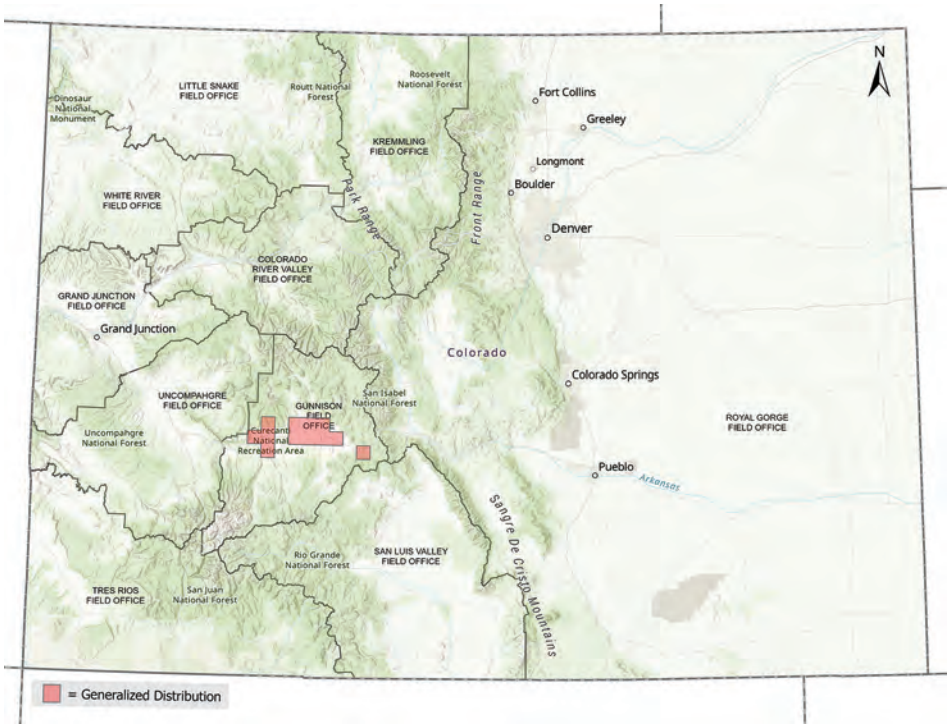
Scott F. Smith

Gina Beebe

Allison Clark

Physaria rollinsii
Rollins' twinpod

Ernie Marx



Physaria rollinsii G.A. Mulligan
Brassicaceae (mustard family)
Conservation ranks: NatureServe G2/S2, BLM Sensitive, SWAP Tier 1
Occurrence by field office: Gunnison

Description

Plants: caespitose perennials, clump-forming with silvery stellate pubescence throughout, stems are several from the base, decumbent, and 0.5–1 dm long; **leaves**: basal leaves form a small rosette, leaf blades are usually oblanceolate, narrowly elliptic, or triangular, margins entire or with 1 or 2 broad teeth, cauline leaves are oblanceolate with entire margins; **flowers**: yellow, racemes are congested and elongated in fruit; **fruit**: siliques, erect, suborbicular, densely pubescent, arranged in pairs, inflated (Ackerfield 2022; Flora of North America 1993+).

Similar species

Only two other species of *Physaria* are known from the low elevations of the Gunnison Basin: *P. acutifolia* and *P. floribunda*. Rollins' twinpod can be distinguished by its relatively small size and its pair of inflated, slightly cordate or nearly obtuse at the base, leathery fruits (Rollins 1993; Ackerfield 2022).

Habitat

Found in granitic talus, open knolls, limestone chiprock, steep slopes, clay banks, near granite boulders (Rollins 1993), and sagebrush (Weber and Wittmann 2012). Elevation 7,300–9,300 ft.

Phenology

Plants flower and fruit from May through June (Rollins 1993; Colorado Natural Heritage Program 2023).

Distribution

Endemic to Colorado. *Physaria rollinsii* is only known from the Gunnison Basin in Gunnison and Saguache counties.

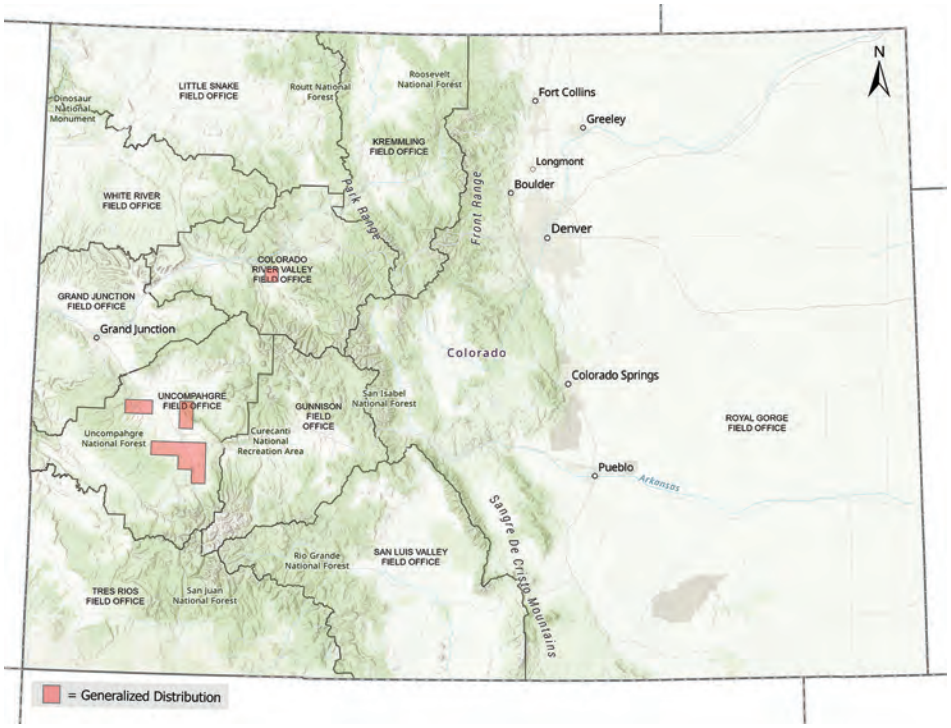
Ernie Marx

Stephen Wenger

Kimberlee Allyn Douglass

Tohmi Barrett

Physaria vicina
Uncompahgre bladderpod



Physaria vicina (J. Anderson, Reveal & Rollins) O'Kane & Al-Shehbaz
Brassicaceae (mustard family)
Conservation ranks: NatureServe G2G3/S2S3, BLM Sensitive, SWAP Tier 2
Occurrence by field office: Colorado River Valley and Uncompahgre

Taxonomy

Synonym = *Lesquerella vicina* J. Anderson, Reveal & Rollins

Description

Plants: perennials, covered in stellate hairs; **leaves**: basal leaves ovate to rhombic, or nearly orbicular, margins entire; **flowers**: creamy white, petals 6–10 mm long; **fruit**: siliques, erect, and stellate-pubescent, fruiting pedicels ascending, sigmoid (S-shaped) or curved, sometimes straight (Ackerfield 2022).

Similar species

Uncompahgre bladderpod is distinguished by its white flower petals.

Habitat

Mancos Shale at the transition from pinyon-juniper woodland to salt desert scrub (Anderson et al. 1997). Also found in sandy soils derived from Jurassic sandstones and in sagebrush steppe. Often in disturbed areas including old roadbeds and cattle trails. Elevation 5,700–7,500 ft.

Phenology

Plants flower and fruit in April and May.

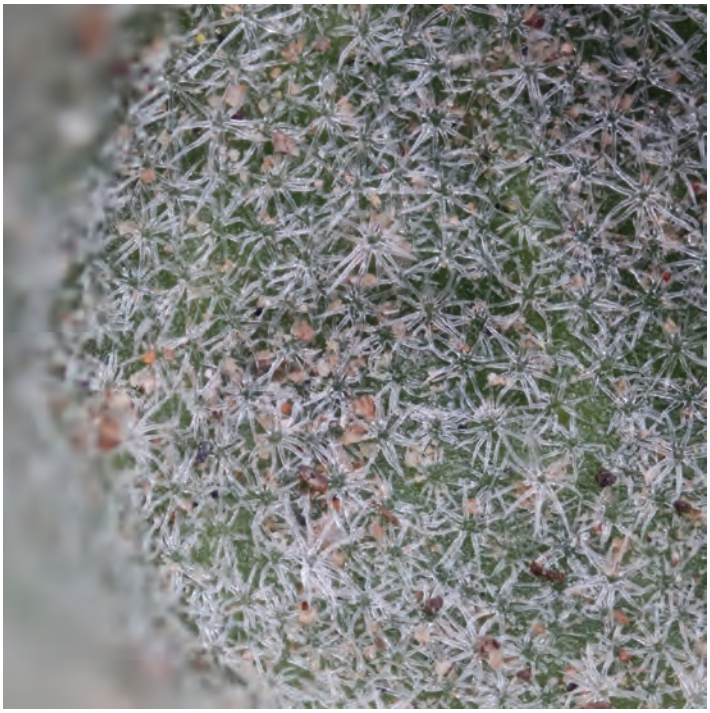
Distribution

Endemic to Colorado. *Physaria vicina* is known from Delta, Garfield, Montrose, and Ouray counties. Recent observations from the Roaring Fork Valley may indicate that the species' range is larger than previously known.

Ernie Marx

Thomas Bergman

Thomas Bergman



Thomas Bergman

Thomas Bergman

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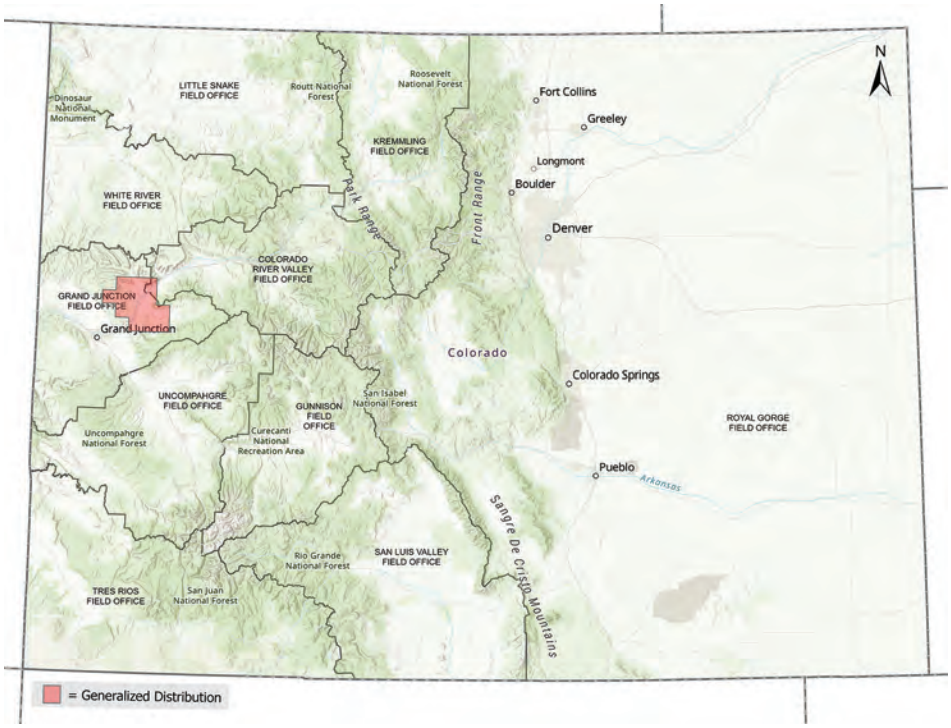
Sclerocactus dawsoniae
Dawson's hookless cactus

Phil Krening



Sclerocactus dawsoniae McGlaughlin & Naibauer
Cactaceae (cactus family)
Conservation ranks: BLM Sensitive
Occurrence by field office: Colorado River Valley and Grand Junction

Taxonomy

Segregated from *Sclerocactus glaucus* (McGlaughlin and Naibauer 2023).

Description

Plants: stems 1 (2), cylindrical, bluish-green, up to 1.5 dm tall, spines 7–9 per areole, generally not hooked at tip; **flowers**: pink to magenta tepals, anthers yellow; **fruit**: cylindrical berry, 9–22 mm long (McGlaughlin and Naibauer 2023).

Similar species

Sclerocactus glaucus is larger on average and generally has more spines per areole. *Sclerocactus parviflorus* consistently has central spines with a strongly hooked tip. In Colorado, members of the genus have allopatric distributions and do not overlap or co-occur. Geographic location is a strong predictor of species.

Habitat

Pinyon-juniper and desert scrub communities. Plants generally occur in gently sloping, stony outwashes at the toe of steep outcrops of exposed Wasatch Formation. Primarily associated with soils derived from the brown, gray, and tan claystones of the Shire and Atwell Gulch Members. Plants are frequently distributed along the margins of shallow, ephemeral washes at the base of shrubs. Plants are almost exclusively found in areas where soil crusts are intact or in areas of "desert pavement" where the soil surface is anchored by cobbles and rock fragments (Krening and Holsinger 2024). Elevation 4,800–6,300 ft.

Phenology

Plants flower late April to May, and fruiting occurs May to June.

Distribution

Endemic to Colorado. *Sclerocactus dawsoniae* is known from the Colorado River Valley in Garfield and Mesa counties. The line separating *S. dawsoniae* from *S. glaucus* is generally considered to be the mouth of De Beque Canyon with *S. dawsoniae* occurring north and east of state highway 65. There is a 10 km distance separating the two species.

Phil Krening

Peter Gordon

Peter Gordon

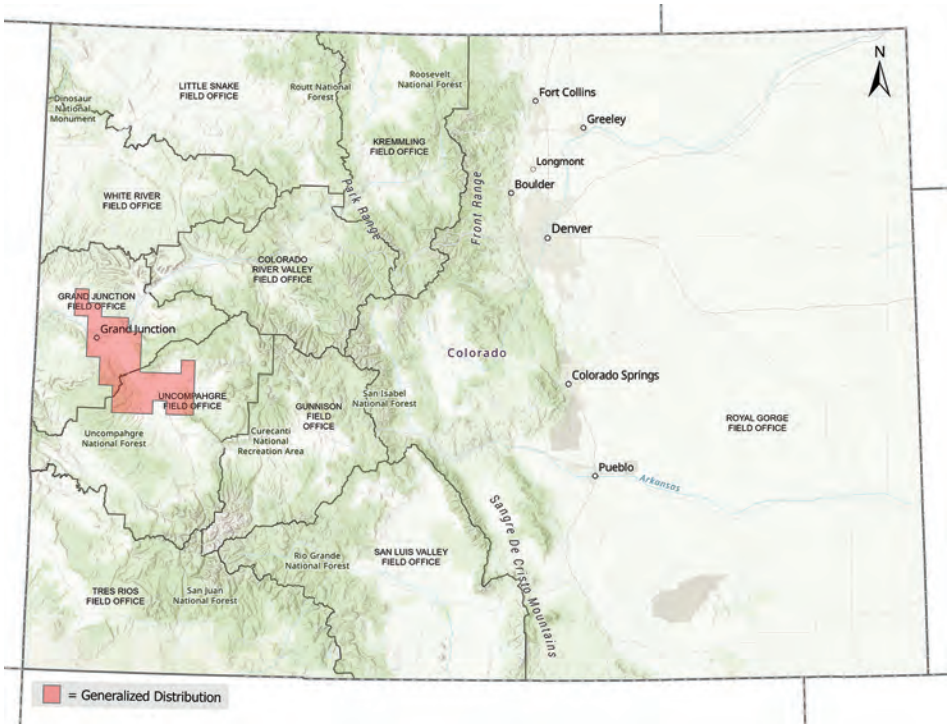
Peter Gordon

Phil Krening

Phil Krening

Sclerocactus glaucus
Colorado hookless cactus

Phil Krening



Sclerocactus glaucus (K. Schum.) L.D. Benson
Cactaceae (cactus family)
Conservation ranks: ESA Threatened, NatureServe G2G3/S2S3, SWAP Tier 1
Occurrence by field office: Grand Junction and Uncompahgre

Taxonomy

Sclerocactus glaucus has had a complicated taxonomic history with multiple revisions. Most recently *S. glaucus* was split into two different species: *S. glaucus* and *S. dawsoniae* (McGlaughlin and Naibauer 2023).

Description

Plants: stems usually unbranched, cylindric to 3 dm, spines 8–15 per areole, central spine straight or rarely hooked; **flowers**: tepals pink with yellow anthers; **fruit**: a cylindrical berry (Flora of North America 1993+; McGlaughlin and Naibauer 2023).

Similar species

Sclerocactus parviflorus consistently has central spines with strongly hooked tips. *S. dawsoniae* is smaller on average and generally has fewer spines per areole. In Colorado, members of the genus have allopatric distributions and do not overlap or co-occur. Geographic location is a strong predictor of species.

Habitat

Desert shrub, pinyon-juniper woodland, and salt-desert scrub communities. Frequently found growing on slopes and benches of course alluvium or those derived from sedimentary parent material within canyons or on clay soils of the Mancos Formation which are frequently scattered with basalt fragments or alluvium. Elevation 4,600–5,600 ft.

Phenology

Plants flower late April to May, and fruiting occurs May to June.

Distribution

Endemic to Colorado. *Sclerocactus glaucus* is known to occur in Mesa and Delta counties. Occurring in the Grand Valley as far west as 18 Road and south along the Gunnison River to near Delta. The line separating *S. dawsoniae* from *S. glaucus* is generally considered to be the mouth of De Beque Canyon with *S. glaucus* occurring south and west of state highway 65. There is a 10 km distance separating the two species.

Peter Gordon

Jeffrey Flory

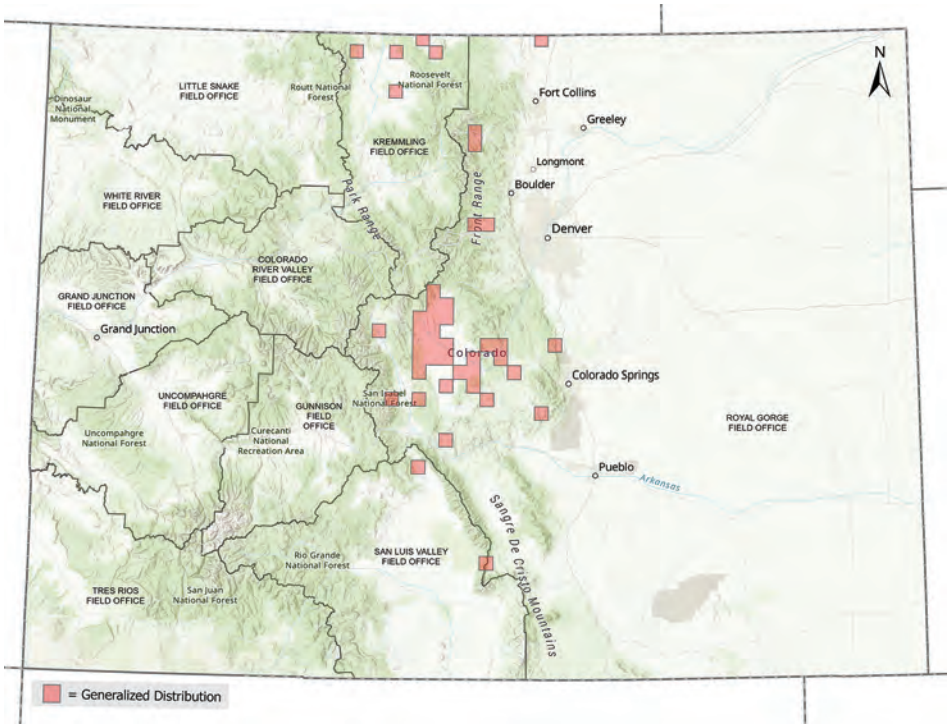
Phil Krening

Phil Krening

Phil Krening

Sisyrinchium pallidum
Pale blue-eyed grass

Bob Lagier



Sisyrinchium pallidum Cholewa & Douglass M. Hend
Iridaceae (iris family)
Conservation ranks: NatureServe G3/S3, BLM Sensitive
Occurrence by field office: Kremmling, Royal Gorge, and San Luis Valley

Description

Plants: herbaceous monocots, perennial, to 3 dm, with unbranched stems; **leaves**: grass-like; **flowers**: six pale blue tepals with yellow bases 7–10 mm long, outer spathe bracts are (18) 28–40 (49) mm long, inner spathe bracts have a narrow hyaline margin all the way to the tip; **fruit**: globose capsules (Ackerfield 2022).

Similar species

Sisyrinchium montanum and *S. idahoense* var. *occidentale* have deep blue flowers. The outer bract of *S. idahoense* var. *occidentale* is subequal to the inner bract. *S. demissum* usually has more than one pedunculate spathe (bract below the inflorescence) arising from the axil of a leaf-like bract on the stem, while pale blue-eyed grass has a single sessile spathe (Spackman et al. 1997). It is especially important to note the color of the flowers (pale blue vs. deep blue) when specimens are taken.

Habitat

Wet meadows, often where ample fresh, often standing water is available at least through June or early July. These include stream, lake, and river margins upslope from the most hydrophytic sedges and rushes, seep areas downstream from earthen dams, and irrigated hay meadows (Hartman 1992). It grows especially on alkaline soils (Culver and Lemly 2013), often with *Juncus arcticus* and *Carex aquatilis*. Elevation 6,500–9,800 ft.

Phenology

Plants flower from about mid-June through July, which likely depends on annual growing conditions, especially the availability of water. Mature fruits are present from near the end of June into early August (Hartman 1992).

Distribution

Regionally endemic to Colorado and Wyoming. Known from Alamosa, Chaffee, El Paso, Fremont, Gilpin, Jackson, Lake, Larimer, Park, Saguache, and Teller counties in Colorado.

Bob Lagier

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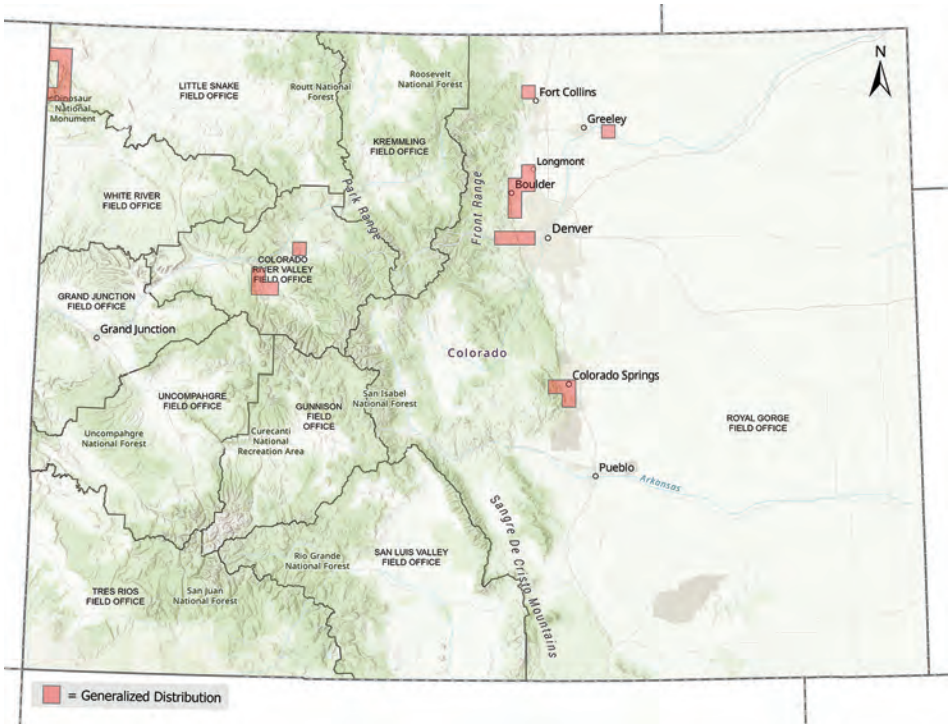
outstanding photo need

Jennifer Ackerfield

Ernie Marx

Spiranthes diluvialis
Ute ladies'-tresses

Jared Shorma



Spiranthes diluvialis Sheviak
Orchidaceae (orchid family)
Conservation ranks: ESA Threatened, NatureServe G2G3/S2, SWAP Tier 1
Occurrence by field office: Colorado River Valley, Little Snake, and Royal Gorge

Description

Plants: perennials, usually 1 stem that is 2–6 dm tall arising from tuberously thickened roots; **leaves**: linear to lanceolate or oblanceolate, narrow, 1 cm wide to 30 cm long; **flowers**: white to yellowish arranged in a dense terminal spike with spirally twisted rows, flowers diverging at a 90-degree angle from the stem; **fruit**: capsules (Ackerfield 2022).

Similar species

Spiranthes romanzoffiana lip petals are deeply constricted in the middle and have an erose tip; the spikes that are tightly spiraled flowers diverging at 45-degree angles from the stem (Weber and Wittmann 2012; Ackerfield 2022; Spackman et al. 1997). *S. romanzoffiana* also usually occurs at higher elevations (Ackerfield 2022).

Habitat

Along streams and open seepage areas in cottonwoods. Moist meadows at moderate elevations, usually occurring on floodplains in the vicinity of abandoned stream channels and meanders where the vegetation is not too dense or overgrown. Soils are both sandy and stony (Jennings 1989). Sub-irrigated alluvial soils along streams and in open meadows in floodplains (Spackman et al. 1997). Associated species include horsetail, milkweed, verbena, lobelia, blue-eyed grass, carpet bentgrass, reed grass, goldenrod, and Canada thistle (USFWS 1995). Elevation 4,500–7,750 ft.

Phenology

Known to flower between July and September in Colorado depending on the year (Spackman et al. 1997).

Distribution

Occurs sporadically across western North America in Idaho, Montana, Nebraska, Nevada, Utah, Washington, British Columbia, and Wyoming. Known from Boulder, Eagle, Garfield, Jefferson, Larimer, and Moffat counties in Colorado.

Ernie Marx

Jared Shorma

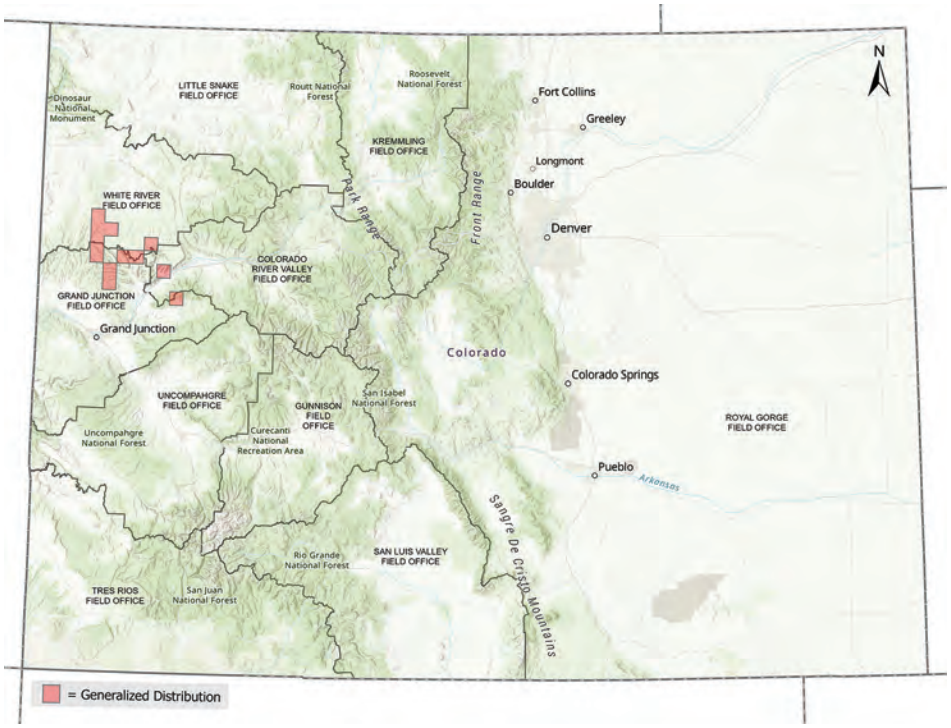
Andrey Zharkikh

Jared Shorma

Matt Langemeier

Thalictrum heliophilum
Sun-loving meadow rue

Lindsey Conrad



Thalictrum heliophilum Wilken & DeMott
Ranunculaceae (buttercup family)
Conservation ranks: NatureServe G2/S2, BLM and Forest Service Sensitive, SWAP Tier 2
Occurrence by field office: Colorado River Valley, Grand Junction, and White River

Description

Plants: dioecious perennials with fibrous-rooted rhizomes and several stout divergent branches to 50 cm in height; **leaves**: ternately compound, leaflets obovate, apically three-toothed, glabrous, and glaucous; **flowers**: imperfect, apetalous, in many flowered panicles; **fruit**: achenes (Ackerfield 2022).

Similar species

Sun-loving meadow rue is distinct from other members of the genus by preferring open sunny sites (*heliophilum* = sun loving), while most other *Thalictrum* spp. prefer at least some shade. *Thalictrum fendleri* has larger leaflets (10–17 x 8–12 mm) that are not waxy (glaucous), more pistils per flower, and occurs in aspen groves and meadows (Ackerfield 2022).

Habitat

Open sunny sites on sparsely vegetated, dry shale slopes. Soils are usually derived from the Green River Formation. Associated vegetation is usually very sparse. Elevation 6,100–8,900 ft.

Phenology

Plants flower from early June to the end of July, and fruiting occurs from July through August (Colorado Natural Heritage Program 2023).

Distribution

Endemic to Colorado. *Thalictrum heliophilum* is restricted to the Roan Plateau in Garfield, Mesa, and Rio Blanco counties.

Ernie Marx

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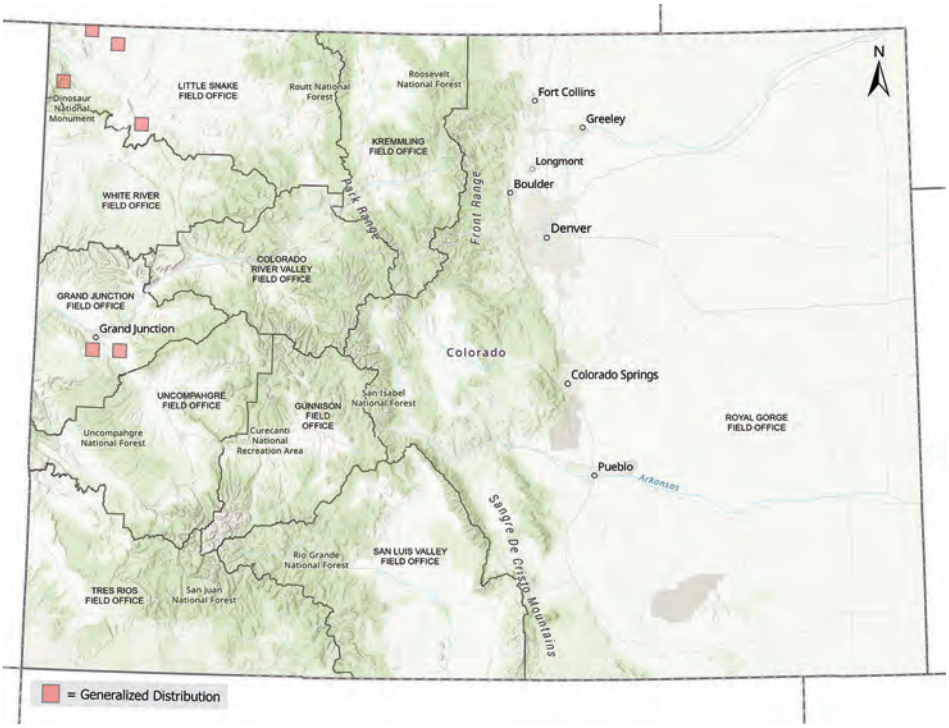
Ernie Marx

Jessica Smith

Townsendia strigosa
Hairy Easter daisy

Andrey Zharkikh



Townsendia strigosa Nutt.
Asteraceae (sunflower family)
Conservation ranks: NatureServe G4/S1S2, BLM Sensitive
Occurrence by field office: Grand Junction and Little Snake

Description

Plants: biennials to 2 dm high, stems reddish decumbent to erect, strigose; **leaves**: basal leaves frequently rosette-like oblaceolate to spatulate to 5 cm long, strigose; **flowers**: white to pink ray flowers with a pappus of 12 or more capillary bristles in pedunculate heads, involucral bracts are acute to slightly acuminate, usually anthocyanic on margins and tips; **fruit**: a cypsela.

Similar species

Townsendia incana occurs in the same habitat and geography but is a perennial with densely white-canescent stems that are typically grey, rather than reddish in appearance.

Habitat

Sandy or clay soil of dry, open places (Ackerfield 2022). This species occurs in pinyon-juniper, salt desert shrub, mixed desert shrub communities, and in open places, with shales, sands, and clays (Flora of North America 1993+; Welsh et al. 2015). Elevation 4,900–7,000 ft.

Phenology

Plants flower May through June (Colorado Natural Heritage Program 2023).

Distribution

Uncommon and sporadically occurring throughout the Rocky Mountain region. *Townsendia strigosa* has been confirmed to occur in Mesa and Moffat counties in Colorado. Also known from Arizona, New Mexico, Utah, and Wyoming.

Zach Coury

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Andrey Zharkikh

Zach Coury

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